Report of the Second Hong Kong Total Diet Study: Pesticide Residues

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EXECUTIVE SUMMARY

The Second Hong Kong Total Diet Study: Pesticide Residues

The Centre for Food Safety (CFS) is conducting the Second Hong Kong Total Diet Study (the 2nd HKTDS) to estimate the latest dietary exposure of the Hong Kong population and various population subgroups to a range of chemical substances of potential food safety concern, and in turn assess the associated health risks. This report presents the dietary exposure assessment to the residues of four groups of pesticides or their metabolites, namely neonicotinoids (neonics), organophosphorus pesticides (OPPs), carbamates, and dithiocarbamate (DTC) metabolites, along with 26 other individual pesticides.

2. The application of pesticides and other chemicals has become an integral part of modern agricultural practices, serving to enhance crop yields, preserve the nutritional integrity of food, facilitate food storage to assure year-round supplies and provide attractive and appealing food products. When used appropriately, pesticides protect crops from harmful microorganisms, including toxin-producing fungi, thereby contributing to public health. Under strict adherence to Good Agricultural Practice (GAP), only acceptable amounts of pesticide residues should remain in the crops or, in connection, foods of animal origin. Neonics, OPPs, carbamates and DTCs are pesticides commonly employed as insecticides, herbicides or fungicides on crops. In the past two decades, other new types of pesticides have also been introduced in the market.

3. The adverse health effects of pesticides on humans depend on their toxicity, as well as the amount and duration of exposure to the pesticide residues. OPPs and carbamates act by inhibiting the enzyme acetylcholinesterase (AChE) and may lead to signs of neurotoxicity but they generally do not accumulate in the human body. Neonics bind more strongly to nicotinic acetylcholine receptors in insects than in mammals and are generally considered less toxic to humans than OPPs and carbamates. DTC metabolites are of greater concern than their respective parent compounds due to their known thyroid toxicity. The 26 other pesticides, including various insecticides, fungicides, herbicides and plant growth regulators from classes such as pyrazole, amide, heterocyclic, phosphonate and imidazolinone, may pose health risks after chronic excessive exposure. Such exposure may be associated with liver and thyroid toxicity, reduced body weight gain, developmental and reproductive toxicity, urinary toxicity, and neurotoxicity in experimental animals.

Results

4. A total of 101 pesticides or their metabolites, including 75 under four groups, namely neonics (11), OPPs (45), carbamates (16), and DTC metabolites (3), and 26 other individual pesticides, were analysed in 374 composite samples involving 187 TDS food items. Overall, 39 pesticides or metabolites (39%) were not detected in any composite samples and the remaining 62 pesticides or metabolites (61%) were detected at low levels in the composite samples either singly or in combination. Among the four groups of pesticides or metabolites, neonics was the most commonly detected group (in 49% of all composite samples with the highest mean level at 460 μg/kg (upper bound)), followed by OPPs (37%, 180 μg/kg) and carbamates (26%, 850 μg/kg). The pesticides or metabolite residues analysed in this study were predominantly found in plant-based food items, such as vegetables and fruits.

5. The dietary exposure estimates of both the Hong Kong adult and younger populations to the pesticide or metabolite residues were found to be below their respective Health-based Guidance Values (HBGVs). The dietary exposure estimates to the majority of detected pesticide or metabolite residues contributed to less than 5% of respective HBGVs for both average and high consumers in the adult and younger populations, except five residues, namely, disulfoton, fipronil, glufosinate ammonium, phorate and propylene thiourea (PTU) (their contribution to HBGVs (in regard to the upper bound exposure estimates) ranged from 3.0-20% and 4.3-28% for average consumers, and 4.2-28% and 6.6-43% for high consumers, in the adult and younger populations, respectively).

Conclusions and Recommendations

6. About 40% of pesticides or metabolites analysed in this study were not detected in any food samples while the remaining about 60% were found at low levels in food samples, primarily in foods of plant origin such as vegetables and fruits.

7. The dietary exposure estimates of the Hong Kong population to the pesticide or metabolite residues analysed were below their respective HBGVs. The findings indicated that dietary exposure to all the pesticide or metabolite residues analysed in this study would be unlikely to pose health risks to both average and high consumers of the local adult and younger populations.

8. The findings also indicated that the dietary exposure to the residues of relevant pesticides or their metabolites of local adult population was comparable to or lower than those reported in the first Hong Kong Total Diet Study (the 1st HKTDS) (2010-2014). More importantly, both HKTDSs independently concluded that dietary exposure to the analysed pesticides or metabolites among the local adult population is

unlikely to pose health risks.

9. The findings re-affirmed the safety of basic dietary advice on healthy eating, i.e., have a balanced and varied diet which includes a wide variety of fruits and vegetables.

Chapter 1

Background

1.1 Total Diet Study (TDS) is a tool for estimating population chronic dietary exposure to a wide range of chemicals across the whole diet within one study, which is an internationally recognised approach for quantifying the presence of chemical substances in the food supply and for estimating dietary exposure. The Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) have been promoting and supporting the TDS approach since the 1970's. The Centre for Food Safety (CFS) conducted the First Hong Kong Total Diet Study (1st HKTDS) in 2010-2014.[1]

Introduction of the Second Hong Kong Total Diet Study (2nd HKTDS)

1.2 With the availability of an updated set of food consumption data as obtained from the Second Population-based Food Consumption Survey (2nd FCS) (2018-2020)[2], the CFS has taken the opportunity to conduct the Second Hong Kong Total Diet Study (2nd HKTDS). The 2nd HKTDS aims to estimate the latest dietary exposure of the Hong Kong population and various population subgroups to a range of chemical substances of potential food safety concern, and in turn assess the associated health risks.

1.3 Similar to the 1st HKTDS, the 2nd HKTDS comprises selection of chemical substances, development of a TDS food list, food sampling, sample preparation, laboratory analysis, dietary exposure assessment and publication of results. The 2nd HKTDS covers the majority of foods normally consumed by the Hong Kong population, with laboratory analysis conducted for over 130 chemical substances covering contaminants, pesticide residues and some food additives of local concern, in food.

Pesticide Residues

1.4 Pesticides are commonly used in crop production for preventing, destroying, repelling or mitigating pests. The application of pesticides and other chemicals has become an integral part of modern agricultural practices, serving to enhance crop yield, preserve the nutritional integrity of food, facilitate food storage to assure year-round supplies and provide attractive and appealing food products. Under strict adherence to Good Agricultural Practice (GAP), only acceptable amounts of pesticide residues should remain in the crops or, in connection, foods of animal origin. In Hong Kong, the Administration introduced the Pesticide Residues in Food Regulation (Cap. 132CM) in 2012 and the Regulation came into operation on 1 August 2014. The Regulation specifies in Schedule 1 a list of maximum residue limits (MRLs) / extraneous maximum residue limits (EMRLs) for certain pesticide-food pairs, i.e. the maximum concentration of specified pesticide residues permitted in specified food commodities. For pesticide residues with no specified MRLs/EMRLs in Schedule 1, the Regulation stipulates that except for exempted pesticides, import or sale of food containing such pesticide residues is allowed if the consumption of the food concerned is not dangerous or prejudicial to health based on risk assessment conducted by CFS. While our food surveillance programme has occasionally identified samples containing pesticide residues above regulatory limits, it should be noted that any potential health implications would depend on several factors. These include the inherent toxicity of the pesticide in question, the actual quantity consumed, and the duration of exposure after accounting for food processing.

1.5 This report focuses on estimation of the dietary exposure of the local population to the residues of four groups of pesticides or their metabolites, including

11 neonicotinoids (neonics), 45 organophosphorus pesticides (OPPs), 16 carbamates and three dithiocarbamate (DTC) metabolites, as well as 26 other pesticides, and assessment of their associated potential health risks. Pesticides under the two groups, i.e. OPPs and carbamates, and two DTC metabolites were studied in the 1st HKTDS. In other words, the 11 neonics and 26 other pesticides as well as one of the DTC metabolites are studied for the first time in this round of TDS.

Neonicotinoids (Neonics)

1.6 Neonicotinoids (Neonics) are a new class of insecticides with a similar structure to nicotine and have been used in agriculture since the late 1990s, gradually replacing OPPs and carbamates as the most widely used insecticides. Commonly used neonics include acetamiprid (ACE), clothianidin (CLO), imidacloprid (IMI) and thiamethoxam (THI) [3,4]. Besides, two new pesticides, namely flupyradifurone (FLU) and sulfoxaflor (SUL), have been introduced to the market as alternatives of neonics since 2000s. Since they have the same mode of action as the neonics, they are also regarded as new generation neonicotinoid insecticides [5,6]. The 11 neonics covered in this study are listed in Appendix A.

Sources of Neonicotinoids

1.7 Neonics are widely used in agriculture as insecticides, for controlling insects by acting as agonist at the nicotinic acetylcholine receptors (nAChRs), which affects the synapses in the insect central nervous system [7]. Neonics (e.g. IMI) are also used for veterinary proposes, such as tick control and flea collars for pets.[8] Neonics are systemic pesticides, which are absorbed throughout the plant, resulting in distribution in all parts of the plant.[8,9]

Sources of Exposure

1.8 Given their extensive use, neonics are ubiquitous in food and the environment, leading to anticipated dietary exposure for the general population. Since some specific neonics (e.g. CLO, IMI and THI) have been reported to pose risks to bee health and may lead to contamination of groundwater, the European Union has prohibited the outdoor use of these neonics.[8]

Toxicity

1.9 Unlike acetylcholinesterase (AChE) inhibiting insecticides (such as OPPs and carbamates), neonics exhibit a stronger binding affinity to nAChRs in insects as compared with mammals. As a result, neonics are generally regarded as having lower toxicity levels in humans.[3, 4,10]

1.10 Following oral administration, neonics are rapidly absorbed in mammals with no potential for accumulation, and primarily excreted through urine. In experimental animals, neonics demonstrate low to moderate acute toxicity, with clinical signs including fatigue, twitching, cramps, and muscle weakness for dinotefuran (DIN), and neurotoxicity for ACE, CLO, SUL, thiacloprid (THIA) and THI. Chronic excessive exposure to some neonics (e.g. ACE, CLO, FLU, IMI, SUL, THIA) was found to affect thyroid gland, liver, kidney, reproduction and/or development of experiment animals. Neonics are unlikely to be genotoxic nor to pose carcinogenic risk at dietary exposure levels in humans.[7]

1.11 Regarding the Health-based Guidance Values (HBGVs) for the 11 neonics analysed in this study, the Joint Food and Agriculture Organization of the United Nations (FAO) / World Health Organization (WHO) Meeting on Pesticide Residues (JMPR) and/ or Joint FAO/WHO Expert Committee on Food Additives (JECFA) have

established Acceptable Daily Intakes (ADIs) for eight while the remaining three neonics have ADIs specified in the National Standard of People's Republic of China (PRC) GB 2763-2021. The HBGVs, ranging from 0.005 to 0.53 mg/kg body weight (bw)/day, are listed in Appendix A.

Organophosphorus Pesticides (OPPs)

1.12 OPPs are synthetic chemical compounds, many of which are esters, amides or thiol derivatives of phosphoric, phosphonic, phosphorothioic, or phosphonothioic acids. OPPs can be categorised into three main groups, namely phosphates (without a sulphur atom), phosphorothioates (with one sulphur atom) and phosphorodithioate (with two sulphur atoms).[11, 12] The 45 OPPs covered in this study are listed in Appendix A.

Sources of OPPs

1.13 OPPs are predominantly used in agriculture as insecticides to control pests such as insects, mites, *etc*. Some OPPs are also employed as veterinary drugs, including diazinon [13], ethion, phoxim and trichlorfon. These pesticides are mainly applied on plants during their growing stage.[11]

Sources of Exposure

1.14 For the general population, diet represents the main route of exposure to pesticide residues. Crops that have been improperly treated with pesticides or harvested too soon after pesticide application are the main potential sources of dietary exposure. When crops that are cultivated following GAP, pesticide residues in food are unlikely to reach levels that pose risk to human health.[11]

Toxicity

1.15 OPPs can be absorbed through the skin, respiratory tract or gastrointestinal tract in insects and animals. In human and animals, they are metabolised primarily through oxidation, hydrolysis with esterases, and by glutathione S-transferase catalyse conjugation reactions. The residues are then excreted mainly via urine, with lesser amounts via faeces.[11,12]

1.16 OPPs act by inhibiting the neurotransmitter AChE enzyme, leading to respiratory, myocardial and neuromuscular transmission impairment. The acute toxicity of these OPPs varies from highly toxic (e.g. phorate) to practically non-toxic (e.g. tolclofos methyl) in experimental animals. In humans, symptoms of OPP acute intoxication include muscarinic, nicotinic and central nervous system (CNS) manifestations that develop quickly, although there may be a delay of a few hours for some lipophilic OPPs. Mild cases have symptoms typically resolve quickly with minimal long term residual effects, while severe cases often lead to respiratory failure. As the organophosphorylated enzyme is stable in many instances, recovery from intoxication can be slow, and often a lower dose as compared with carbamate pesticides can achieve a particular toxic effect. Long-term exposure to high levels of OPPs may result in typical cholinergic symptoms in humans. However, most OPPs do not accumulate extensively in the body, allowing AChE levels returning to pre-exposure levels once exposure ceases. [11,12]

1.17 Regarding the HBGVs of the 45 OPPs tested in this study, JMPR and/ or JECFA have established ADIs for 36 OPPs, and six OPPs have ADIs specified in the National Standard of PRC GB 2763-2021. The remaining three OPPs have HBGVs established by the United States Environmental Protection Agency (USEPA), the Agency for Toxic Substances and Disease Registry (ATSDR) of the United States, or

the Australian Pesticides and Veterinary Medicines Authority (APVMA). The HBGVs, ranging from 0.00002 to 0.3 mg/kg bw/day, are listed in Appendix A.

Carbamates

1.18 Carbamate pesticides are synthetic chemical compounds that have been introduced in the market since 1950s. This study covers two groups of carbamates, (i.e. the alkyl or aryl carbamates and thiocarbamates) collectively referred to as carbamates. The alkyl or aryl carbamates are N-substituted esters of carbamic acid while thiocarbamates are the semi-sulphur analogues of carbamates.[14,15] A total of 16 carbamate pesticides, including 13 alkyl or aryl carbamates and three thiocarbamates, are covered in the current study and listed in Appendix A.

Sources of Carbamates

1.19 Carbamates are mainly used in agriculture as insecticides, herbicides and fungicides, *etc*., and may also be used in household products.[14,15] Alkyl or aryl carbamates may be applied onto the plants and then reach the soil, or applied directly to the soil. In general, alkyl or aryl carbamates decompose rapidly through photodegradation or photodecomposition due to their light absorption characteristics. They are metabolised by microorganisms, plants and animals or broken down in water and soil, and may bioaccumulate in food chains to a slight extent.[14] On the other hand, most thiocarbamates are rapidly degraded in the environment, especially by soil microorganisms, and unlikely bioaccumulate in food chains due to their rapid metabolic breakdown.[15]

Sources of Exposure

1.20 The primary route of exposure to carbamates for the general population is through ingestion of food. Since some carbamates can reach groundwater via the soil, consumption of groundwater can be a second dietary exposure with minor contribution.[14] Occupational exposure to carbamates via the inhalation and dermal routes is also possible for agricultural workers.[14,15]

Toxicity

1.21 Similar to the OPPs, alkyl or aryl carbamates act by inhibiting AChE in the nervous system. These carbamates are metabolised in a similar manner in mammals, insects and plants, and exhibit similar toxic effects in mammals and insects. The metabolites of these carbamates are mainly excreted rapidly in the urine of most mammals. Limited available data suggest that these carbamates are also excreted rapidly via urine in humans. Therefore, the potential of these carbamates to accumulate in the animal body is likely to be low.[14] The acute toxicity of these carbamates varies from highly toxic (e.g. aldicarb) to practically non-toxic (e.g. phenmedipham) in experimental animals. Apart from the AChE activity, chronic excessive exposure to these carbamates may also affect the haemopoietic system, impair liver and renal function, and cause testicular degeneration in experimental animals. Nonetheless, these adverse effects vary depending on the animal strain and the chemical structure of the carbamates.[14]

1.22 Similarly, most of the thiocarbamates are likely to be rapidly degraded and eliminated from the body, mainly via expired air and urine. These thiocarbamate compounds exhibit low to moderate acute toxicity in experimental animals. While demonstrating AChE inhibition activity in rabbit, thiocarbamates show comparatively low toxicity in birds and honey bees.[15]

1.23 Regarding the HBGVs of the 16 carbamates tested in this study, JMPR and the European Food Safety Authority (EFSA) have established ADIs for eight and two carbamates, respectively, while three carbamates have ADIs specified in the National Standard of PRC GB 2763-2021. The remaining three carbamates (i.e. the three thiocarbamates) have HBGVs established either by USEPA or in WHO Guidelines for Drinking-Water Quality. The HBGVs, ranging from 0.002 to 0.4 mg/kg bw/day, are listed in Appendix A.

Dithiocarbamate (DTC) Metabolites

1.24 Dithiocarbamates (DTCs) represent an important class of compounds commonly employed as fungicides in agricultural applications. DTCs can be categorised into three main groups, namely dimethyl dithiocarbamates (DMDTCs), ethylene bisdithiocarbamates (EBDTCs) and propylene bisdithiocarbamates (PBDTCs), along with other individual DTCs such as metam and dazomet. Of particular toxicological significance are the major common metabolites, ethylene thiourea (ETU) and propylene thiourea (PTU), which have been demonstrated to exhibit considerably greater toxicity than their parent compounds, particularly with regard to thyroid toxicity.[16,17] On the other hand, N,N'-dimethylthiourea (DMTU), an impurity of metam and dazomet that may persist in crops after their uses, displays comparable or greater toxicity relative to its parent compounds.[18,19] Given their toxicological significance, these three DTC metabolites were included in the current study.

Sources of the DTC Metabolites

1.25 DTCs are commonly used on a wide range of agricultural produces and crops and they are known to undergo rapid degradation after application.[16] DMTU

can exist as both an impurity and degradation product of metam (a methyl-DTC) and dazomet (a DMDTC in form of heterocyclic six membered ring), whereas ETU is the metabolite of EBDTCs such as maneb, zineb and mancozeb and PTU is a degradation product of the PBDTCs, propineb, as well as a plant and animal metabolite.[16,18,19,20]

Sources of Exposure

1.26 The primary dietary sources of DTC metabolites are agricultural products treated with DTCs and their processed food derivatives. Exposure of the general population to DTC metabolites is mainly through the consumption of foods containing these pesticide residues.[16,18,19]

Toxicity

1.27 Available toxicological data on DMTU remain limited. However, given its structural similarity to the parent compound, metam, DMTU is presumed to exhibit equivalent toxicity as the parent compound. Besides, since the metam for testing also contained 1% of the impurity, DMTU, all toxicity endpoints and related classifications for metam are considered sufficiently covered the toxicity of DMTU.[21] The toxicological end points derived for metam are also applicable to DMTU.[18] The toxicity information of metam is provided as follows for reference. Animal studies indicate that following oral exposure, metam is rapidly absorbed and eliminated mainly in urine and expired air. The distribution of metam in the body is uniform with slight accumulation in the thyroid. Acute oral toxicity studies in animals demonstrate harmful effects of metam, while chronic exposure leads to reduced body weight gain, damage in the nasal passages, changes in some haematology and spleen parameters, and hepatotoxicity with an increase in Alanine Transaminase (ALT) and histopathological changes in liver.[21]

1.28 Animal studies reveal that ETU and PTU are rapidly absorbed and eliminated, mainly in the urine after oral exposure. ETU and PTU are fairly uniformly distributed in the body with the exception of the thyroid which has higher levels than other tissues.[16, 22 , 23] While ETU exhibits low acute oral toxicity in experimental animals, comparable acute oral toxicity data for PTU in experimental animals remain unavailable. The main adverse effects associated with long-term ingestion of ETU and PTU in experimental animals are thyroid and teratogenic effects.[22,23]

1.29 International Agency for Research on Cancer (IARC) has classified ETU as Group 3 agent, i.e. not classifiable as to its carcinogenicity to humans.[24] No classification has been made to DMTU and PTU.

1.30 Regarding the HBGVs of the three DTC metabolites tested in this study, EFSA has established ADI of 0.001 mg/kg bw/day for DMTU (i.e. the ADI derived for metam), whereas JMPR has established ADIs of 0.004 mg/kg bw/day and 0.0003 mg/kg bw/day for ETU and PTU, respectively (Appendix A).[18,20,21,22]

Other Pesticides

1.31 Along with the four common groups of pesticides or metabolites as discussed at above, the 2nd HKTDS has also covered 26 other pesticides, belonging to various chemical classes such as amide, heterocyclic, phosphonate, pyrazole, and imidazolinone classes, as listed in Appendix A. All these 26 pesticides can be co-analysed with the other selected chemical substances and most of them have been introduced to the market and evaluated by JMPR in the past two decades.

Sources of the Pesticides

1.32 The 26 other pesticides covered in this study are employed in agricultural practices as fungicides, insecticides, herbicides and / or plant growth regulators. Among these, lufenuron is also used in veterinary medicine. These compounds exhibit diverse modes of action. For instance, most of the studied fungicides (e.g. isofetamid and fluxapyroxad) act by adversely affecting the mitochondrial respiration in fungi, while the studied insecticides (e.g. cyantraniliprole and fipronil) act by causing the death of insects, such as through blocking or unregulated activation of certain critical channels in insects.[7] The studied herbicides (i.e. imazamox, imazapic, glufosinate ammonium) act by inhibiting protein and nucleotide biosynthesis, ammonia detoxification, and / or amino acid metabolism in plants[7]. For plant growth regulators (e.g. ethephon and maleic hydrazide) included in this study, they may act by affecting fruit ripening and maturation, or inhibiting sprouting in crops such as potatoes, bulb vegetables.[7]

Sources of Exposure

1.33 For the general population, dietary intake represents the main route of exposure to pesticides. Crops that have been improperly treated with pesticides or harvested too soon after pesticide treatment contribute as the main potential sources of dietary exposure to pesticide residues. When pesticides are used in accordance with GAP standards, residual levels in food products should not pose significant health concerns.

Toxicity

1.34 The majority of these 26 pesticides are rapidly absorbed following oral administration in animal studies, with exceptions of ametoctradin which indicates

limited and saturable absorption as well as pyriproxyfen which indicates slow and incomplete absorption. Elimination of these pesticides generally occurs rapidly and predominantly via bile, faeces or urine. However, fipronil exhibits protracted excretion via urine and faeces, likely due to the slow release from lipophilic tissues in experimental animals. While the majority of these 26 pesticides demonstrate low potential of bioaccumulation in the animal body, four insecticides, namely fipronil, lufenuron, pyriproxyfen and fluensulfone, are exceptions, showing a higher tendency for retention in animal tissues.[7]

1.35 The acute toxicity of these 26 pesticides ranges from moderately toxic to practically non-toxic. Chronic excessive exposure to these pesticides may induce hepatotoxicity, thyroid toxicity, and / or reduced body weight gain in experimental animals. Some may additionally demonstrate developmental and reproductive toxicity, urinary toxicity, and /or neurotoxicity. Current evidence suggests that these pesticides are unlikely to exhibit genotoxic properties or present carcinogenic risk at usual dietary exposure levels in humans.[7]

1.36 Regarding the HBGVs, JMPR and/ or JECFA have established ADIs for 25 out of these 26 other pesticides covered in this study, and the remaining one, i.e. ametoctradin, has ADI specified in the National Standard of PRC GB 2763-2021. The HBGVs, ranging from 0.0002 to 10 mg/kg bw/day, are listed in Appendix A.

Chapter 2

Methodology and Laboratory Analysis

Methodology of the 2nd HKTDS

2.1 The 2nd HKTDS involved purchasing samples of commonly consumed food across Hong Kong. These samples were prepared into the form of food normally consumed, then combined into well-defined food composites. The composites were homogenised and analysed for a range of chemical substances. The analytical results were combined with the food consumption information of both the adults aged 18+ and younger population aged 6-17 as captured from the Second Hong Kong Population-based Food Consumption Survey (2nd FCS)[2] and the Food Consumption Survey of the Younger Population 2021-2022 (FCSYP)[25], respectively, to estimate the dietary exposure to pesticide residues in the local population.

2.2 Based on the 2nd FCS[2], 187 TDS food items (involving 15 food groups) were selected for the Study. Six samples of each TDS food item were collected and prepared into a form of food normally consumed on each of the two occasions from February 2023 to January 2024. A total of 2,244 samples were collected and combined into 374 composite samples for laboratory analysis.

2.3 Dietary exposure assessments were conducted using a refined deterministic approach and performed with the aid of an in-house web-based computer system, the EASY2 (Exposure Assessment System 2), which involved food mapping and weighting of data. The mean and 90th percentile exposure levels were used to represent the dietary exposure of average and high consumers within the local population, respectively. The dietary exposure estimates to individual pesticide or

metabolite residues of average and high consumers were compared with the respective health-based Guidance Values (HBGVs) of the pesticides or metabolites to assess the associated chronic health risks.

2.4 Details of the methodology are given in the same series of reports on Methodology.[26]

Laboratory Analysis

2.5 Laboratory analysis of the 101 studied pesticide or metabolite residues (with a total of 161 analytes involved) was conducted by the Food Research Laboratory (FRL) of the CFS. All 374 composite samples prepared from 2,244 individual samples of the 187 TDS food items taken from the two sampling occasions were tested.

2.6 Multi-residue test methods utilising liquid chromatography-tandem mass spectrometry (LC-MS/MS) were employed for the analysis of pesticide or metabolite residues. Given the varying chemical and physical properties of the pesticide residues, which would result in different analytical performance characteristics, a total of 150 analytes of individual pesticide or metabolite residues were categorised into four groups basing on their characteristics, and another 11 analytes of highly polar pesticide or metabolite residues were analysed separately.

2.7 In brief, a portion of each composite sample was weighed and extracted with suitable solvent. Afterwards, part of the extract was cleaned up with appropriate dispersive solid phase extraction materials, depending on the food matrices, that would affect the performance of respective multi-residue test method. Finally, the analytical confirmation and quantification were performed by LC-MS/MS. Details of the laboratory analysis methods are provided in Appendix B.

2.8 The limits of detection (LODs) for the 161 analytes of the pesticide or metabolite residues ranged from 0.15 to 10 μg/kg in food and from 0.02 to 0.75 μg/kg in water. An exception was phosphonic acid, with higher LODs of 40 μg/kg in food and 4.0 μg/kg in water.

Treatment of Analytical Results

2.9 In this study, data were treated with the lower bound (LB) and upper bound (UB) approaches. The approaches present two extreme scenarios, based on the consideration that the true value for results below the LOD may actually be any value between zero and the achieved LOD. The LB scenario assumes that the chemical is absent; thus, a value of zero is assigned to results reported as <LOD. The UB scenario assumes that the chemical is present at the level of the LOD; thus, a value of the corresponding LOD is assigned to results reported as <LOD.

2.10 Among the 101 pesticides or metabolites analysed, 30 of them included more than one analyte. Their concentration levels and dietary exposure values were given in form of combined adjusted residues. This adjustment approach accounts for molecular weight differences or scales values using toxicity factors, with reference to the residue definitions for dietary exposure assessment of respective pesticides. For example, the combined concentration levels for dimethoate were calculated by summing up the concentration levels of dimethoate and 2.5 times of the concentration levels of omethoate, whereas the combined concentration levels for acephate were calculated by summing up the concentration levels of acephate and 7.5 times of those of methamidophos. These combined adjusted residue levels would then be applied for dietary exposure estimation. The list of the 30 pesticides with more than one

analyte, as well as the conversion factors applied, are provided in Appendix C.

2.11 For those pesticides with no detectable residues in all of the 374 composite samples, dietary exposure estimation was not presented in detail in this report. This approach aligns with international practice adopted in overseas TDSs regarding treatment of study results on non-detected pesticide residues.[27,28]

Chapter 3

Results and Discussions

Neonicotinoids (Neonics)

Concentrations of Neonics in TDS Foods

3.1 A comprehensive analysis was conducted on a total of 374 composite samples, which included 187 TDS food items involving 15 food groups. These samples were collected and prepared on two separate sampling occasions to test for neonics. Out of these, 183 composite samples (49% of the total), involving 103 TDS food items and 13 food groups, were found to contain detectable levels of neonics, either singly or in combination.

3.2 Among the 11 neonics tested, ten were detected in one or more of the 374 composite samples. The only neonic that was not detected in any composite samples was cycloxaprid (CYC).

3.3 The numbers of composite samples detected with neonics across TDS food groups are summarised in Table 1. The individual TDS food items with the detection of neonics are provided in Table D.1 of Appendix D. Besides, the levels of individual neonics found in individual TDS food items are given in Part E.1 of Appendix E.

Table 1: Numbers of Composite Samples in TDS Food Groups of the 2nd HKTDS with Detectable Levels of Neonicotinoids (Neonics)

	Food group	No. composite samples analysed	No. composite samples with detectable levels	No. composite samples with detectable level of neonics									
				Acetamiprid (ACE)	Clothianidin (CLO)	Dinotefuran (DIN)	Flupyradifurone (FLU)	Imidacloprid (IMI)	Imidaclothiz (IMID)	Nitenpyram (NIT)	Sulfoxaflor (SUL)	Thiacloprid (THIA)	Thiamethoxam (THI)
1	Cereals and their products	42	11	4	4	2	3	6	0	0	0	0	3
2	Vegetables and their products	84	75	40	71	39	28	60	0	9	3	1	67
3	Legumes, nuts and seeds and their products	18	7	3	4	3	4	5	0	0	0	0	5
4	Fruits	36	32	23	23	10	15	26	1	1	7	5	20
5	Meat, poultry and game and their products	34	5	0	1	4	0	0	0	0	0	0	0
6	Egg and their products	6	0	Not detected in all samples									
7	Fish and seafood and their products	48	2	1	0	0	0	1	0	0	0	0	1
8	Dairy products	16	3	1	1	0	1	1	0	0	0	0	0
9	Fats and oils	4	0	Not detected in all samples									
10	Beverages, alcoholic	4	2	1	2	0	0	2	0	0	1	0	2
11	Beverages, non-alcoholic	24	9	9	3	6	0	9	0	0	0	2	8
12	Mixed dishes	24	19	7	18	10	0	12	0	1	1	0	19
13	Snack foods	2	2	0	2	0	0	2	0	0	0	0	2
14	Sugars and confectionery	10	4	2	0	0	2	2	0	0	0	0	0
15	Condiments, sauces and herbs	22	12	7	8	4	3	11	1	0	0	0	7
	Total	374	183	98	137	78	56	137	2	11	12	8	134

3.4 Among the neonics tested, IMI, CLO, and THI were the three most commonly detected residues (detected in 137, 137 and 134 composite samples respectively across 81, 78, 77 TDS food items). Following these, ACE was detected in 98 composite samples from 63 TDS food items, DIN in 78 composite samples from 52 TDS food items, and FLU detected in 56 composite samples from 37 TDS food items (refer to Table 1 and Table D.1 of Appendix D). The remaining four neonics (i.e. imidaclothiz (IMID), nitenpyram

(NIT), SUL and THIA) were each detected in ≤ 12 composite samples, each accounting for less than 4% of the total composite samples (Table 1).

3.5 Foods of plant origin, such as fruits and vegetables, were found to have a higher prevalence of detectable levels of neonics. Specifically, the four food groups of plant origin (i.e. "cereal and their products", vegetables and their products", "legumes, nuts and seeds and their products" and "fruits") were found to have detectable levels of neonics in 69% (125 out of 180) of composite samples (Table 1). In contrast, the four food groups of animal origin (i.e. "meat, poultry and game and their products", "egg and their products", "fish and seafood and their products" and "dairy products") were only found to have detectable levels of neonics in 9.6% (10 out of 104) of composite samples (Table 1). Moreover, the food group "mixed dishes" was found to contain a higher proportion of composite samples (79%, 19 out of 24) with detectable levels of neonics. In fact, the detection of pesticide residues in food items under the food group "mixed dishes" may be originated from ingredients of plant and / or animal origins.

3.6 The neonic with the highest residue level was THI in Chinese kale (mean (upper bound): 460 μg/kg), followed by THI in green string beans (mean (upper bound): 430 μg/kg) and FLU in green string beans (mean (upper bound): 270 μg/kg) (Part E.1 in Appendix E).

3.7 Two neonics, namely CLO and THI, were detected with levels exceeding the maximum residue limits (MRLs) as stipulated in the Pesticide Residues in Food Regulation (Cap. 132CM) in six composite samples (covering five TDS food items, i.e. bitter melon, cucumber, melon, papaya and green string beans (with pod)) (see Part E.1 in Appendix E). The CFS has taken appropriate follow up actions, including tracing the sources of the individual samples in question and taking follow up samples for testing. All subsequent test results were found to be satisfactory.

Dietary Exposure to Neonics

3.8 Table 2 shows the dietary exposure estimates of both the local adult and younger populations to neonic residues. Among the ten neonics detected in the TDS foods, dietary exposure estimates (upper bound) of adult population ranged from 0.0045 μg/kg bw/day (IMID) to 0.12 μg/kg bw/day (IMI) for average consumers, and from 0.0064 μg/kg bw/day (IMID) to 0.25 μg/kg bw/day (THI) for high consumers, whereas those of younger population ranged from 0.0065 μg/kg bw/day (IMID) to 0.17 μg/kg bw/day (IMI) for average consumers, and from 0.010 μg/kg bw/day (IMID) to 0.37 μg/kg bw/day (THI) for high consumers. Notably, the upper-bound dietary exposure estimates for both average and high consumers across the local adult and younger populations to the ten neonics were all below 1% of their respective HBGVs (Figure 1).

Table 2: Dietary Exposure Estimates (μg/kg bw/day) to Neonicotinoids (Neonics) for Average and High Consumers of the Local Adult and Younger Populations and their Contribution to Health-based Guidance Values (HBGVs)

	HBGVs (mg/ kg bw/ day)	Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs) (LB-UB)[a, b, c]			
		Adult		Younger population	
		Average consumers	High consumers [d]	Average consumers	High consumers [d]
Acetamiprid (ACE)	0.07	0.088-0.092 (0.13-0.13%)	0.21-0.22 (0.30-0.31%)	0.078-0.085 (0.11-0.12%)	0.21-0.22 (0.30-0.31%)
Clothianidin (CLO)	0.01	0.032-0.035 (0%)	0.050-0.053 (0.050-0.053%)	0.047-0.052 (0-0.052%)	0.076-0.082 (0.076-0.082%)
Dinotefuran (DIN)	0.2	0.039-0.069 (0%)	0.082-0.12 (0-0.059%)	0.050-0.096 (0%)	0.12-0.18 (0.061-0.089%)
Flupyradifurone (FLU)	0.08	0.030-0.10 (0-0.13%)	0.061-0.15 (0.076-0.19%)	0.046-0.15 (0.058-0.18%)	0.11-0.25 (0.13-0.31%)
Imidacloprid (IMI)	0.05	0.046-0.12 (0.093-0.24%)	0.095-0.18 (0.19-0.37%)	0.064-0.17 (0.13-0.34%)	0.15-0.29 (0.31-0.58%)
Imidaclothiz (IMID)	0.025	0-0.0045 (0%)	0-0.0064 (0%)	0-0.0065 (0%)	0-0.010 (0%)
Nitenpyram (NIT)	0.53	0.0016-0.013 (0%)	0.0039-0.019 (0%)	0.0035-0.020 (0%)	0.0093-0.032 (0%)

	HBGVs (mg/ kg bw/ day)	Dietary exposure estimates (µg/kg bw/day) (% Contribution to HBGVs) (LB-UB)[a, b, c]			
		Adult		Younger population	
		Average consumers	High consumers [d]	Average consumers	High consumers [d]
Sulfoxaflor (SUL)	0.05	0.0012-0.024 (0%)	0.0031-0.034 (0-0.068%)	0.0021-0.035 (0-0.070%)	0.0056-0.054 (0-0.11%)
Thiacloprid (THIA)	0.01	0.0010-0.0051 (0-0.051%)	0.0028-0.0077 (0-0.077%)	0.0011-0.0073 (0-0.073%)	0.0032-0.012 (0-0.12%)
Thiamethoxam (THI)	0.08	0.095-0.11 (0.12-0.13%)	0.23-0.25 (0.29-0.31%)	0.12-0.14 (0.16-0.18%)	0.35-0.37 (0.43-0.47%)

a LB and UB denote lower bound and upper bound respectively.
b Figures for dietary exposure estimates and % contribution to HBGVs are rounded to two significant figures.
c Values of "0" denote < 0.0005 µg/kg bw/day of dietary exposure estimates while values of "0%" denote < 0.05% of contribution to HBGVs.
d Exposure estimates of high consumers refer to the exposure estimates at 90th percentile.

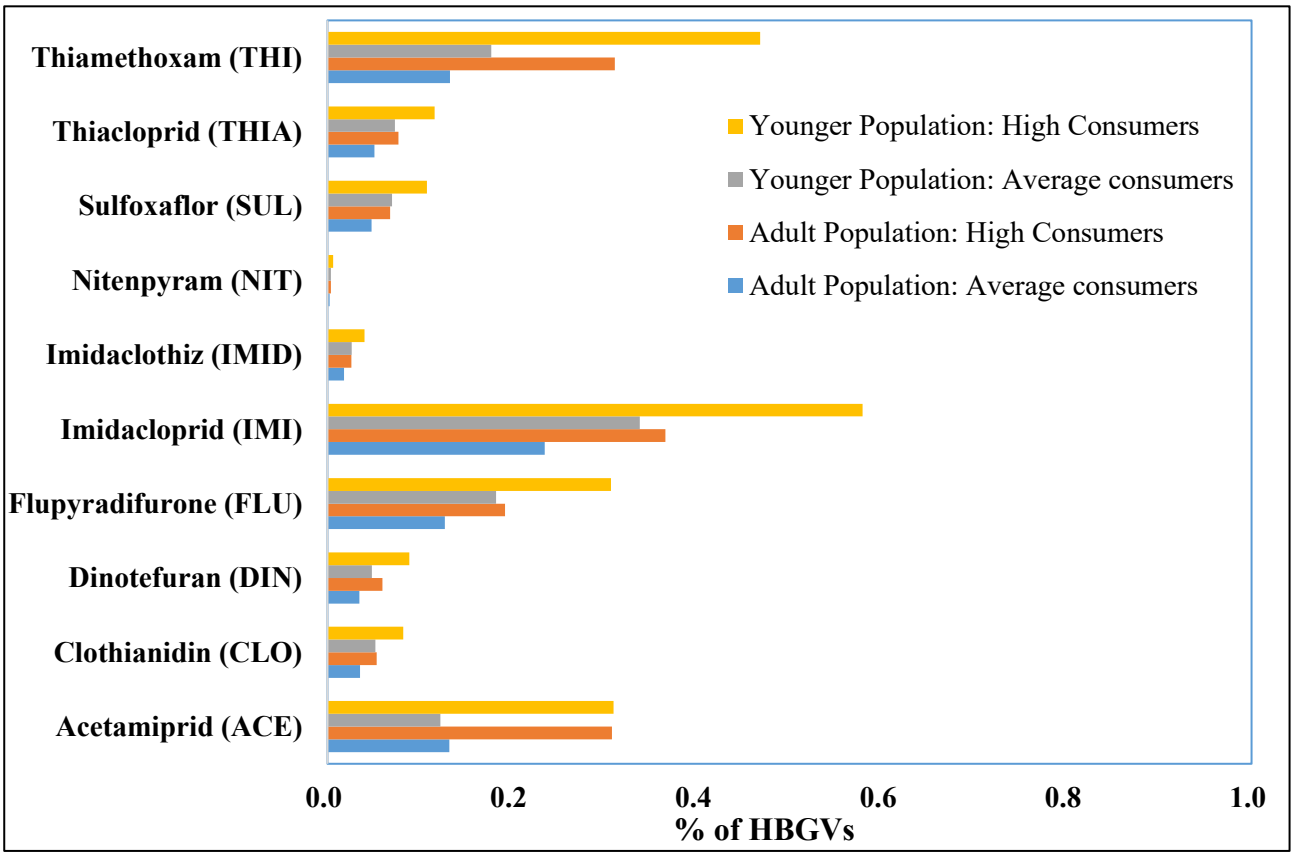

Figure 1: Dietary Exposure Estimates (Upper Bound) to Neonicotinoids (Neonics) for Average and High Consumers of the Adult and Younger Populations Expressed as Percentages of the Health-based Guidance Values (HBGVs)

3.9 A more in-depth analysis was conducted to assess the dietary exposure of individual age-gender population subgroups to the ten neonics. The detailed results of this analysis are provided in Appendix F. The upper-bound dietary exposure estimates to the ten neonics for all age-gender-population subgroups, including both average and high consumers within the adult and younger populations, were all below 1% of their respective HBGVs.

3.10 The study findings reveal that all dietary exposure estimates were far below their respective HBGVs, and therefore dietary exposure to neonic residues is unlikely to pose health risks to both average and high consumers in the local adult and younger populations.

Organophosphorus Pesticides (OPPs)

Concentrations of OPPs in TDS Foods

3.11 A total of 374 composite samples, comprising 187 TDS food items involving 15 food groups, were collected and prepared on two separate sampling occasions for testing OPPs. Out of these, 138 composite samples (37% of the total), involving 91 TDS food items and 12 food groups, were found to contain detectable levels of OPPs, either singly or in combination.

3.12 Among the 45 OPPs tested, 21 were detected in one or more of the 374 composite samples. The 24 OPPs that were not detected in any composite samples are listed in Appendix A.

3.13 The numbers of composite samples with detectable levels of OPPs across TDS food groups are summarised in Table 3. The individual TDS food items with

the detection of OPPs are presented in Table D.2 of Appendix D. Besides, the levels of individual OPPs found in each TDS food item are given in Part E.2 of Appendix E.

Table 3: Numbers of Composite Samples in TDS Food Groups of the 2nd HKTDS with Detectable Levels of Organophosphorus Pesticides (OPPs)

	Food group	No. composite samples analysed	No. composite samples with detectable levels	No. composite samples with detectable level of OPPs																					
				Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
1	Cereals and their products	42	23	0	3	2	0	1	0	0	0	0	0	0	0	2	0	0	3	6	15	0	0	0
2	Vegetables and their products	84	40	1	25	0	2	1	6	1	0	0	1	12	2	0	0	0	0	3	0	9	0	0
3	Legumes, nuts and seeds and their products	18	7	1	4	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	2	0	0
4	Fruits	36	12	1	5	0	0	0	2	0	0	1	0	1	0	2	1	0	1	2	0	0	0	0
5	Meat, poultry and game and their products	34	8	0	0	0	2	0	0	0	1	0	1	0	0	0	0	0	3	1	1	0	0	0
6	Egg and their products	6	0	Not detected in all samples																					
7	Fish, seafood and their products	48	14	0	8	0	0	0	0	0	2	0	0	0	0	0	0	0	1	6	0	0	4	2
8	Dairy products	16	0	Not detected in all samples																					
9	Fats and oils	4	2	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
10	Beverages, alcoholic	4	0	Not detected in all samples																					
11	Beverages, non-alcoholic	24	5	0	2	0	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
12	Mixed dishes	24	17	0	7	1	1	1	1	0	0	0	1	0	2	0	0	0	2	6	9	1	0	0
13	Snack foods	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Sugars and confectionery	10	3	0	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0
15	Condiments, sauces and herbs	22	6	1	5	0	0	0	0	0	0	2	0	2	2	1	1	1	1	3	2	4	2	0
	Total	374	138	4	64	3	5	5	10	1	3	3	5	16	6	9	2	1	12	27	30	16	6	2

3.14 The most commonly detected OPP residue was chlorpyrifos, found in 64 composite samples from 43 TDS food items, followed by pirimiphos methyl, found in 30 composite samples from 21 TDS food items and phoxim, found in 27 composite samples from 21 TDS food items (Table 3 and Table D.2 in Appendix D). The remaining 18 OPPs (86% of the detected OPPs) were found in ≤ 16 composite samples each (< 5% of the total composite samples) (Table 3).

3.15 Foods of plant origin, such as cereals and vegetables were more commonly found to have detectable levels of OPPs. Specifically, the four food groups of plant origin (i.e. "cereal and their products", vegetables and their products", "legumes, nuts and seeds and their products" and "fruits") collectively accounted for 46% (82 out of 180) of composite samples with detectable levels of OPPs (Table 3). In contrast, the four food groups of animal origin (i.e. "meat, poultry and game and their products", "egg and their products", "fish and seafood and their products" and "dairy products") were only found to have 21% (22 out of 104) of composite samples with detectable levels of OPPs (Table 3). Moreover, the food group "mixed dishes" was found to contain a higher proportion of composite samples (71%, 17 out of 24) with detectable levels of OPPs. In fact, the detection of pesticide residues in food items under the food group "mixed dishes" may be originated from ingredients of plant and / or animal origins.

3.16 The highest residue level was observed for phoxim in sesame seed oil (mean (upper bound): 180 μg/kg), followed by fenthion in green string beans (mean (upper bound): 50 μg/kg) and acephate in Chinese parsley (mean (upper bound): 39 μg/kg) (Part E.2 in Appendix E).

3.17 One of the composite samples of green string beans (with pod) was detected with fenthion at level exceeding the maximum residue limit (MRL) as stipulated in the

Pesticide Residues in Food Regulation (Cap. 132CM) (see Part E.2 in Appendix E). The CFS has taken appropriate follow up actions, including tracing the sources of the individual samples and conducted additional testing. In the subsequent testing, two samples of green string beans (with pod) were found to contain fenthion at levels exceeding its MRL. Follow up actions have been undertaken by the CFS promptly and the unsatisfactory results were announced via CFS webpage. Based on the levels of fenthion detected in these two samples, adverse health effects are unlikely under usual consumption.

Dietary Exposure to OPPs

3.18 Table 4 shows the dietary exposure estimates to OPP residues in the local population. Among the 21 OPPs detected in the TDS foods, dietary exposure estimates (upper bound) for adult population ranged from 0.0044 μg/kg bw/day (edifenphos) to 0.37 μg/kg bw/day (acephate) for average consumers, and from 0.0063 μg/kg bw/day (edifenphos and triazophos) to 0.52 μg/kg bw/day (acephate) for high consumers, whereas those of younger population ranged from 0.0065 μg/kg bw/day (edifenphos and triazophos) to 0.54 μg/kg bw/day (acephate) for average consumers, and from 0.0098 μg/kg bw/day (edifenphos) to 0.81 μg/kg bw/day (acephate) for high consumers. The dietary exposure estimates (upper bound) of average and high consumers across the adult and younger populations for all 21 OPPs, except disulfoton and phorate, were below 4% of their respective HBGVs (Figure 2). The dietary exposure estimates (upper bound) of adult population to disulfoton and phorate, respectively, were 14% and 6.0% of their respective HBGVs among average consumers, and 20% and 8.6% of their respective HBGVs, among high consumers, while those of younger population were 20% and 8.8% of their respective HBGVs

among average consumers and 31% and 13% of their respective HBGVs among high consumers (Figure 2).

Table 4: Dietary Exposure Estimates (μg/kg bw/day) to Organophosphorus Pesticides (OPPs) for Average and High Consumers of the Local Adult and Younger Populations and their Contribution to Health-based Guidance Values (HBGVs)

	HBGVs (mg/ kg bw/ day)	Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs) (LB-UB)[a, b, c]			
		Adult		Younger population	
		Average consumers	High consumers [d]	Average consumers	High consumers [d]
Acephate	0.03	0.00074-0.37 (0-1.2%)	0.00082-0.52 (0-1.7%)	0.0016-0.54 (0-1.8%)	0.0027-0.81 (0-2.7%)
Chlorpyrifos	0.01	0.0030-0.0071 (0-0.071%)	0.0063-0.011 (0.063-0.11%)	0.0040-0.0099 (0-0.099%)	0.0082-0.016 (0.082-0.16%)
Chlorpyrifos methyl	0.01	0-0.012 (0-0.12%)	0.0016-0.017 (0-0.17%)	0.00078-0.018 (0-0.18%)	0.0027-0.027 (0-0.27%)
Diazinon	0.003	0-0.0045 (0-0.15%)	0-0.0064 (0-0.21%)	0-0.0066 (0-0.22%)	0.00082-0.010 (0-0.34%)
Dichlorvos	0.004	0.0022-0.025 (0.056-0.62%)	0.0082-0.035 (0.20-0.87%)	0.00076-0.034 (0-0.85%)	0.0023-0.051 (0.058-1.3%)
Dimethoate	0.001	0.0017-0.017 (0.17-1.7%)	0.0022-0.024 (0.22-2.4%)	0.0026-0.025 (0.26-2.5%)	0.0033-0.039 (0.33-3.9%)
Disulfoton	0.0003	0-0.042 (0-14%)	0-0.060 (0-20%)	0-0.061 (0-20%)	0-0.093 (0-31%)
Edifenphos	0.003	0-0.0044 (0-0.15%)	0-0.0063 (0-0.21%)	0-0.0065 (0-0.22%)	0-0.0098 (0-0.33%)
Ethion	0.002	0-0.0045 (0-0.23%)	0-0.0065 (0-0.32%)	0-0.0067 (0-0.34%)	0.00069-0.010 (0-0.50%)
Fenthion	0.007	0.0028-0.061 (0-0.88%)	0.0029-0.089 (0-1.3%)	0.0045-0.090 (0.065-1.3%)	0.013-0.14 (0.19-2.0%)
Fosthiazate	0.004	0.0011-0.0055 (0-0.14%)	0.0030-0.0084 (0.075-0.21%)	0.0014-0.0077 (0-0.19%)	0.0031-0.012 (0.077-0.30%)
Isocarbophos	0.003	0.0011-0.0055 (0-0.18%)	0.0026-0.0081 (0.087-0.27%)	0.00090-0.0073 (0-0.24%)	0.0026-0.011 (0.087-0.38%)
Malathion	0.3	0-0.0047 (0%)	0.00064-0.0066 (0%)	0.00058-0.0069 (0%)	0.0011-0.011 (0%)
Methamidophos	0.004	0-0.046 (0-1.2%)	0-0.065 (0-1.6%)	0-0.067 (0-1.7%)	0-0.10 (0-2.5%)
Methidathion	0.002	0-0.012 (0-0.59%)	0-0.017 (0-0.84%)	0-0.017 (0-0.86%)	0-0.026 (0-1.3%)
Phorate	0.0007	0-0.042 (0-6.0%)	0-0.060 (0.068-8.6%)	0-0.062 (0-8.8%)	0.00076-0.094 (0.11-13%)
Phoxim	0.004	0.0069-0.011 (0.17-0.28%)	0.018-0.022 (0.44-0.56%)	0.0047-0.011 (0.12-0.27%)	0.011-0.019 (0.28-0.47%)
Pirimiphos methyl	0.03	0.0010-0.0052 (0%)	0.0024-0.0075 (0%)	0.0018-0.0077 (0%)	0.0040-0.012 (0%)
Profenofos	0.03	0.0011-0.0055 (0%)	0.0027-0.0084 (0%)	0.0020-0.0084 (0%)	0.0061-0.014 (0%)

	HBGVs (mg/ kg bw/ day)	Dietary exposure estimates (µg/kg bw/day) (% Contribution to HBGVs) (LB-UB)[a, b, c]			
		Adult		Younger population	
		Average consumers	High consumers [d]	Average consumers	High consumers [d]
Triazophos	0.001	0-0.0045 (0-0.45%)	0-0.0063 (0-0.63%)	0-0.0065 (0-0.65%)	0-0.0099 (0-0.99%)
Trichlorfon	0.002	0-0.012 (0-0.59%)	0-0.017 (0-0.84%)	0-0.017 (0-0.86%)	0-0.026 (0-1.3%)

a LB and UB denote lower bound and upper bound respectively.

b Figures for dietary exposure estimates and % contribution to HBGVs are rounded to two significant figures.

c Values of "0" denote < 0.0005 µg/kg bw/day of dietary exposure estimates while values of "0%" denote < 0.05% of contribution to HBGVs.

d Exposure estimates of high consumers refer to the exposure estimates at 90th percentile.

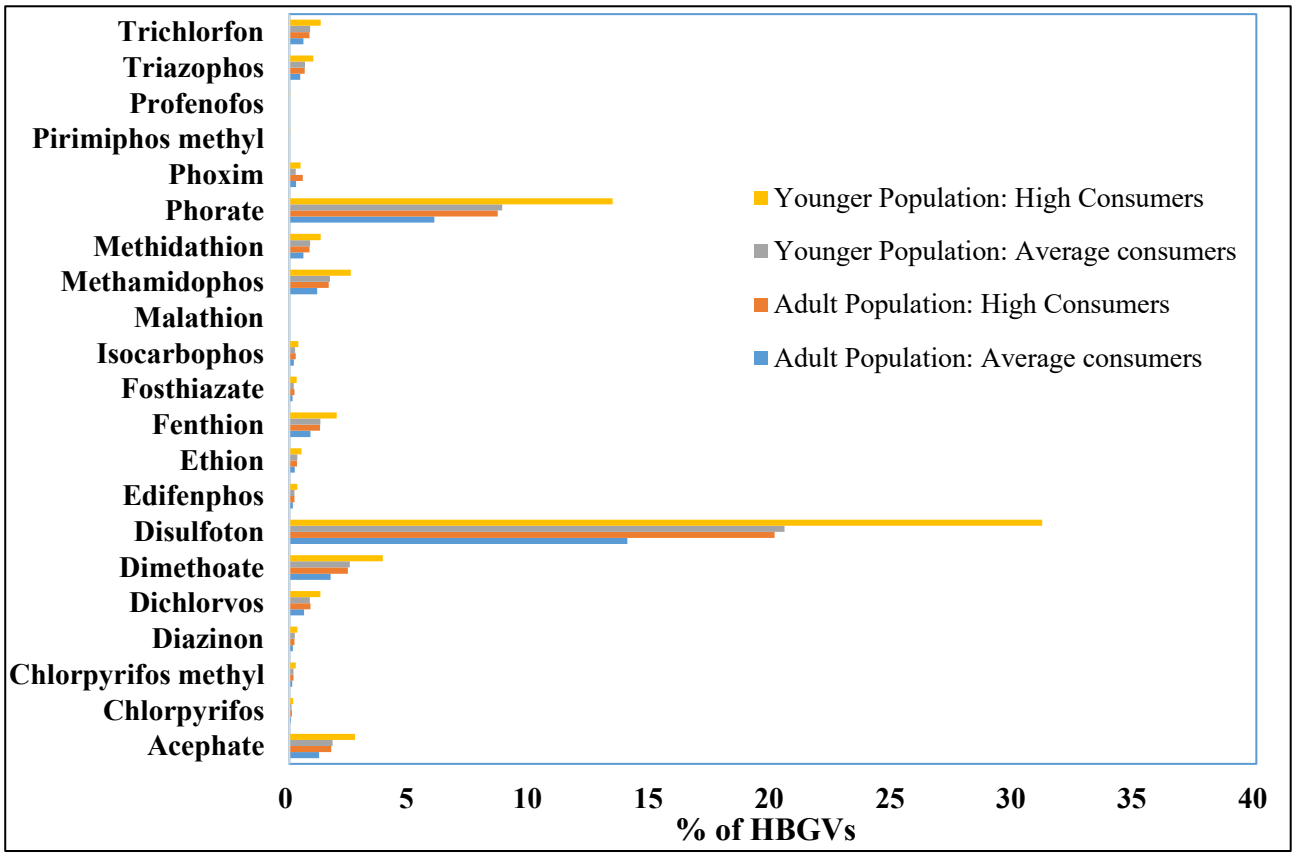

Figure 2: Dietary Exposure Estimates (Upper Bound) to Organophosphorus Pesticides (OPPs) for Average and High Consumers of the Adult and Younger Populations Expressed as Percentages of the Health-based Guidance Values (HBGVs)

3.19 A detailed subgroup analysis of dietary exposure to the 21 OPPs across individual age-gender population subgroups was conducted and the results are given in Appendix F. The dietary exposure estimates (upper bound) of adult and younger populations to disulfoton and phorate, respectively, ranged from 13-24% and 5.5-10% of their respective HBGVs among average consumers, and from 19-34% and 8.0-15% of their respective HBGVs, among high consumers. The dietary exposure estimates (upper bound) to the remaining 19 OPPs for both average and high consumers within adult and younger populations were below 5% of their respective HBGVs.

3.20 The study findings reveal that all dietary exposure estimates remained below their respective HBGVs, and therefore dietary exposure to OPP residues is unlikely to pose health risks to both average and high consumers in the local adult and younger populations.

Carbamates

Concentrations of Carbamates in TDS Foods

3.21 A total of 374 composite samples, comprising 187 TDS food items involving 15 food groups, collected and prepared over two separate sampling occasions were analysed for carbamates. Out of these, 99 composite samples (26%), involving 63 TDS food items and ten food groups, were found to contain detectable levels of carbamates, either singly or in combination.

3.22 Among the 16 carbamates included for the testing, eight were found in one or more of the 374 composite samples analysed. The eight carbamates that were not detected in any composite samples, including all three thiocarbamates are listed in Appendix A.

3.23 The numbers of composite samples with detectable levels of carbamates across TDS food groups are summarised in Table 5. The individual TDS food items with the detection of carbamates are given in Table D.3 of Appendix D. The levels of individual carbamates found in each TDS food item are provided in Part E.3 of Appendix E.

Table 5: Numbers of Composite Samples in TDS Food Groups of the 2nd HKTDS with Detectable Levels of Carbamates

	Food group	No. composite samples analysed	No. composite samples with detectable levels	No. composite samples with detectable level of carbamates							
				Carbaryl	Carbosulfan	Fenobucarb (BPMC)	Isoprocarb	Methomyl	Oxamyl	Pirimicarb	Propamocarb
1	Cereals and their products	42	4	1	0	1	0	0	0	0	3
2	Vegetables and their products	84	52	0	1	1	3	2	1	0	51
3	Legumes, nuts and seeds and their products	18	3	0	1	1	0	0	0	0	3
4	Fruits	36	8	0	0	0	0	4	0	0	4
5	Meat, poultry and game and their products	34	0	Not detected in all samples							
6	Egg and their products	6	0	Not detected in all samples							
7	Fish and seafood and their products	48	0	Not detected in all samples							
8	Dairy products	16	0	Not detected in all samples							
9	Fats and oils	4	1	1	0	0	0	0	0	0	0
10	Beverages, alcoholic	4	0	Not detected in all samples							
11	Beverages, non-alcoholic	24	3	0	0	0	0	1	0	0	2
12	Mixed dishes	24	16	0	0	1	1	0	1	0	16
13	Snack foods	2	2	0	0	0	0	0	0	0	2
14	Sugars and confectionery	10	1	0	0	0	0	0	0	1	1
15	Condiments, sauces and herbs	22	9	2	2	5	1	0	0	0	9
	Total	374	99	4	4	9	5	7	2	1	91

3.24 The most commonly detected carbamate residue was propamocarb (detected in 91 composite samples from 55 TDS food items). The remaining seven carbamate residues were each found in less than ten composite samples (accounting for < 3% of the total composite samples) (Table 5 and Table D.3 of Appendix D).

3.25 Foods of plant origin, particularly vegetables, were the most commonly found to have detectable levels of carbamates. Among the four food groups of plant origin (i.e. "cereal and their products", vegetables and their products", "legumes, nuts and seeds and their products" and "fruits"), 37% (67 out of 180) of composite samples were found to have detectable levels of carbamates, in particular the food group "vegetables and their products" was found to have 62% (52 out of 84) of composite samples with detectable levels (Table 5). In contrast, none of composite samples (0 out of 104) from the four food groups of animal origin (i.e. "meat, poultry and game and their products", "egg and their products", "fish and seafood and their products" and "dairy products") found to have detectable levels of carbamates (Table 5). Moreover, the food group "mixed dishes" was found to contain a higher proportion of composite samples (67%, 16 out of 24) with detectable levels of carbamates. Although the food items under the food group "mixed dishes" composed of ingredients of both plant and animal origins, it is believed that the detection of carbamate residues is likely to be originated from ingredients of plant origin.

3.26 The carbamate with the highest residue level was propamocarb in Chinese amaranth (Chinese spinach) (mean (upper bound): 850 μg/kg), followed by propamocarb in spring onion (mean (upper bound): 500 μg/kg) and propamocarb in sponge gourd (mean (upper bound): 170 μg/kg) (Part E.3 in Appendix E).

Dietary Exposure to Carbamates

3.27 Table 6 shows the dietary exposure estimates of the local population to carbamate residues. Among the eight carbamates detected in the TDS foods, dietary exposure estimates (upper bound) of adult population ranged from 0.0044 μg/kg bw/day (fenobucarb (BPMC)) to 0.10 μg/kg bw/day (propamocarb) for average consumers, and from 0.0063 μg/kg bw/day (fenobucarb (BPMC)) to 0.20 μg/kg bw/day (propamocarb) for high consumers, whereas those of younger population ranged from 0.0065 μg/kg bw/day (fenobucarb (BPMC)) to 0.14 μg/kg bw/day (carbosulfan) for average consumers, and from 0.0098 μg/kg bw/day (fenobucarb (BPMC)) to 0.24 μg/kg bw/day (propamocarb) for high consumers. All dietary exposure estimates (upper bound) to the eight carbamates among average and high consumers in both the adult and younger populations were below 3% of their respective HBGVs (Figure 3).

Table 6: Dietary Exposure Estimates (μg/kg bw/day) to Carbamates for Average and High Consumers of the Local Adult and Younger Populations and their Contribution to Health-based Guidance Values (HBGVs)

	HBGVs (mg/kg bw/day)	Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs) (LB-UB)[a, b, c]			
		Adult		Younger population	
		Average consumers	High consumers [d]	Average consumers	High consumers [d]
Carbaryl	0.008	0-0.0045 (0-0.056%)	0-0.0064 (0-0.080%)	0-0.0066 (0-0.083%)	0-0.010 (0-0.12%)
Carbosulfan	0.01	0.0038-0.096 (0-0.96%)	0.0039-0.14 (0-1.4%)	0.0064-0.14 (0.064-1.4%)	0.018-0.22 (0.18-2.2%)
Fenobucarb (BPMC)	0.06	0-0.0044 (0%)	0-0.0063 (0%)	0-0.0065 (0%)	0-0.0098 (0%)
Isoprocarb	0.002	0.00075-0.012 (0-0.62%)	0.0016-0.018 (0.079-0.91%)	0.0010-0.018 (0.051-0.90%)	0.0020-0.028 (0.098-1.4%)
Methomyl	0.02	0.00096-0.0094 (0%)	0.0019-0.013 (0-0.067%)	0.0017-0.014 (0-0.070%)	0.0031-0.021 (0-0.11%)
Oxamyl	0.03	0.0010-0.013 (0-0.14%)	0.0037-0.018 (0-0.20%)	0.0012-0.018 (0-0.20%)	0.0039-0.028 (0-0.31%)
Pirimicarb	0.02	0-0.028	0-0.040	0-0.039	0-0.059

	HBGVs (mg/kg bw/day)	Dietary exposure estimates (µg/kg bw/day) (% Contribution to HBGVs) (LB-UB)[a, b, c]			
		Adult		Younger population	
		Average consumers	High consumers [d]	Average consumers	High consumers [d]
		(0-0.14%)	(0-0.20%)	(0-0.19%)	(0-0.29%)
Propamocarb	0.4	0.10-0.10 (0%)	0.20-0.20 (0-0.050%)	0.11-0.12 (0%)	0.23-0.24 (0.058-0.059%)

a LB and UB denote lower bound and upper bound respectively.

b Figures for dietary exposure estimates and % contribution to HBGVs are rounded to two significant figures.

c Values of "0" denote < 0.0005 µg/kg bw/day of dietary exposure estimates while values of "0%" denote < 0.05% of contribution to HBGVs.

d Exposure estimates of high consumers refer to the exposure estimates at 90th percentile.

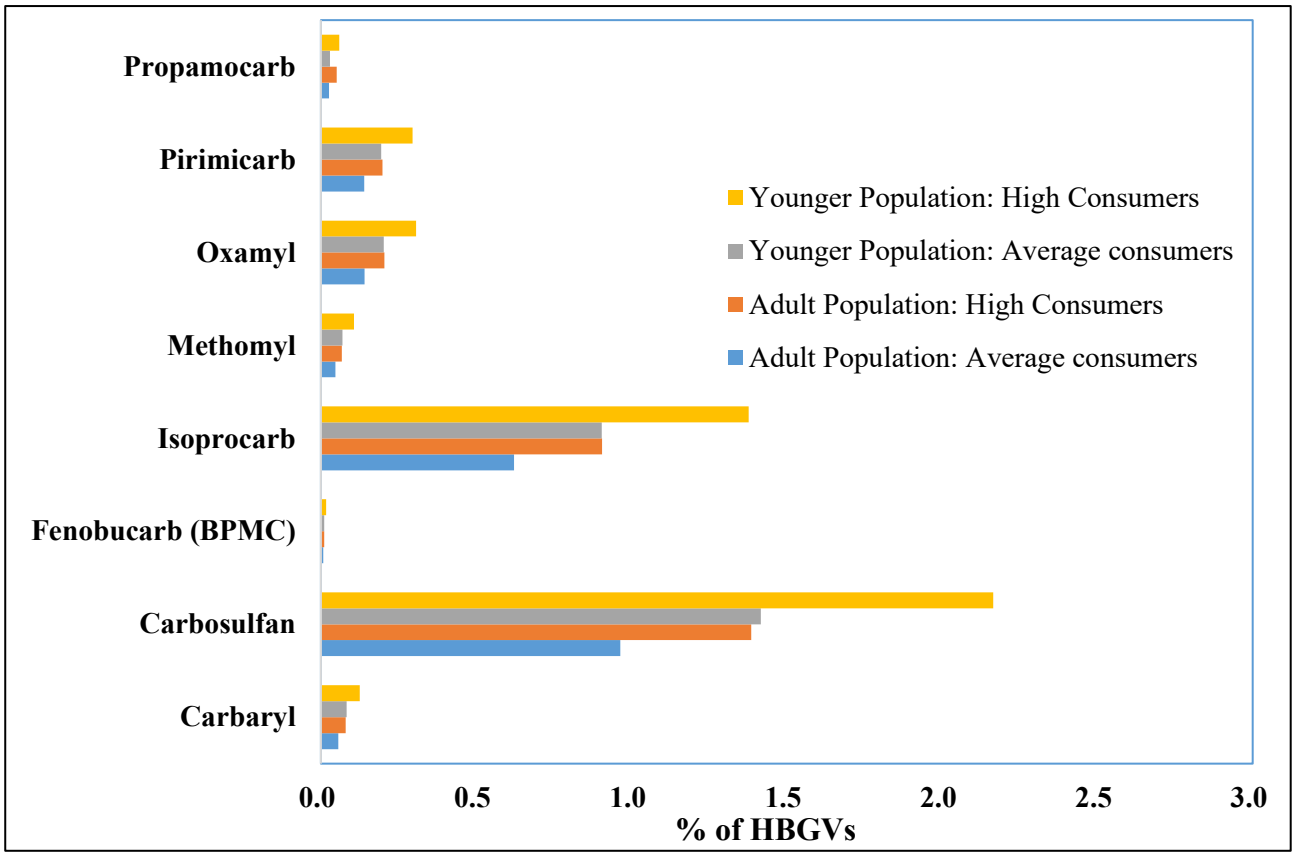

Figure 3: Dietary Exposure Estimates (Upper Bound) to Carbamates for Average and High Consumers of the Adult and Younger Populations Expressed as Percentages of the Health-based Guidance Values (HBGVs)

3.28 A detailed subgroup analysis of dietary exposure to the eight carbamates across individual age-gender population subgroups was performed and the results are given in Appendix F. The dietary exposure estimates (upper bound) to the eight

carbamates for both average and high consumers within adult and younger populations were below 3% of their respective HBGVs.

3.29 The study findings reveal that all dietary exposure estimates were far below their respective HBGVs, and therefore dietary exposure to carbamate residues is unlikely to pose health risks to both average and high consumers in the local adult and younger populations.

Dithiocarbamate (DTC) Metabolites

Concentrations of DTC Metabolites in TDS Foods

3.30 A total of 374 composite samples comprising 187 TDS food items involving 15 food groups, collected and prepared on two separate sampling occasions were analysed for three DTC metabolites. Thirty-eight composite samples (10%), involving 27 TDS food items and seven food groups, were found to contain detectable levels of one of the three DTC metabolites, but none of the composite samples were found to contain more than one DTC metabolites.

3.31 The numbers of composite samples with detectable levels of DTC metabolites across TDS food groups are summarised in Table 7. The individual TDS food items with the detection of three DTC metabolites are given in Table D.4 of Appendix D. The levels of individual DTC metabolites found in each TDS food item are provided in Part E.4 of Appendix E.

Table 7: Numbers of Composite Samples in TDS Food Groups of the 2nd HKTDS with Detectable Levels of Dithiocarbamate (DTC) Metabolites

	Food Group	No. composite samples analysed	No. composite samples with detectable levels	No. composite samples with detectable level of DTC Metabolites		
				DMTU	ETU	PTU
1	Cereals and their products	42	0	Not detected in all samples		
2	Vegetables and their products	84	22	0	20	2
3	Legumes, nuts and seeds and their products	18	1	0	1	0
4	Fruits	36	4	0	1	3
5	Meat, poultry and game and their products	34	0	Not detected in all samples		
6	Egg and their products	6	0	Not detected in all samples		
7	Fish and seafood and their products	48	2	2	0	0
8	Dairy products	16	0	Not detected in all samples		
9	Fats and oils	4	0	Not detected in all samples		
10	Beverages, alcoholic	4	0	Not detected in all samples		
11	Beverages, non-alcoholic	24	0	Not detected in all samples		
12	Mixed dishes	24	4	0	4	0
13	Snack foods	2	2	0	2	0
14	Sugars and confectionery	10	0	Not detected in all samples		
15	Condiments, sauces and herbs	22	3	0	3	0
	Total	374	38	2	31	5

3.32 The most commonly detected DTC metabolite was ETU (detected in 31 composite samples from 21 TDS food items) while DMTU and PTU were found in a few samples (two and five composite samples, respectively) (Table 7 and Table D.4 in Appendix D).

3.33 Foods of plant origin, particularly vegetables, were most commonly found to have detectable level of ETU and PTU, whereas DMTU was only detected in two composite samples from the food group “fish, seafood and their products”. Among the four food groups of plant origin (i.e. “cereal and their products”, vegetables and their products”, “legumes, nuts and seeds and their products” and “fruits”), 15% (27 out of 180) of composite samples were found to have detectable ETU or PTU (Table 7).

In contrast, none of the composite samples (0 out of 104) from the four food groups of animal origin (i.e. “meat, poultry and game and their products”, “egg and their products”, “fish and seafood and their products” and “dairy products”) were found to have detectable levels of ETU or PTU (Table 7).

3.34 Among the 21 TDS food items detected with ETU, the top-three food items containing the highest levels of ETU were watercress (mean (upper bound): 65 μg/kg), spinach (mean (upper bound): 59 μg/kg) and Chinese kale (mean (upper bound: 49 μg/kg). In contrast, PTU and DMTU were detected at low levels in only five and two of the 187 TDS food items, respectively, where pear contained the highest level of PTU (mean level (upper bound): 1.4 μg/kg) and scallop contained the highest level of DMTU (mean (upper bound): 0.80 μg/kg) (Part E.4 of Appendix E).

Dietary Exposure to DTC Metabolites

3.35 Table 8 shows the dietary exposure estimates of the local population to DTC metabolites. For adult population, dietary exposure estimates (upper bound) ranged from 0.012 μg/kg bw/day (DMTU) to 0.035 μg/kg bw/day (ETU) for average consumers, and from 0.017 μg/kg bw/day (DMTU) to 0.061 μg/kg bw/day (ETU) for high consumers. For younger population, dietary exposure estimates (upper bound) ranged from 0.017 μg/kg bw/day (DMTU) to 0.047 μg/kg bw/day (ETU) for average consumers, and from 0.026 μg/kg bw/day (DMTU) to 0.076 μg/kg bw/day (ETU) for high consumers. All dietary exposure estimates (upper bound) for average and high consumers in the adult and younger populations of DMTU and ETU were below 3% of their respective HBGVs (Figure 4). However, those estimates of PTU were all below 16% of its HBGV (Figure 4).

Table 8: Dietary Exposure Estimates (μg/kg bw/day) to Dithiocarbamate (DTC) Metabolites for Average and High Consumers of the Local Adult and Younger Populations and their Contribution to Health-based Guidance Values (HBGVs)

	HBGVs (mg/ kg bw/ day)	Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs) (LB-UB)[a, b, c]			
		Adult		Younger population	
		Average consumers	High consumers [d]	Average consumers	High consumers [d]
N,N'-Dimethyl thiourea (DMTU)	0.001	0-0.012 (0-1.2%)	0-0.017 (0-1.7%)	0-0.017 (0-1.7%)	0-0.026 (0-2.6%)
Ethylene thiourea (ETU)	0.004	0.013-0.035 (0.32-0.89%)	0.034-0.061 (0.86-1.5%)	0.014-0.047 (0.35-1.2%)	0.037-0.076 (0.93-1.9%)
Propylene thiourea (PTU)	0.0003	0-0.021 (0.12-7.1%)	0.0012-0.031 (0.39-10%)	0.00055-0.031 (0.18-10%)	0.0016-0.047 (0.52-16%)

a LB and UB denote lower bound and upper bound respectively.

b Figures for dietary exposure estimates and % contribution to HBGVs are rounded to two significant figures.

c Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates while values of "0%" denote < 0.05% of contribution to HBGVs.

d Exposure estimates of high consumers refer to the exposure estimates at 90th percentile.

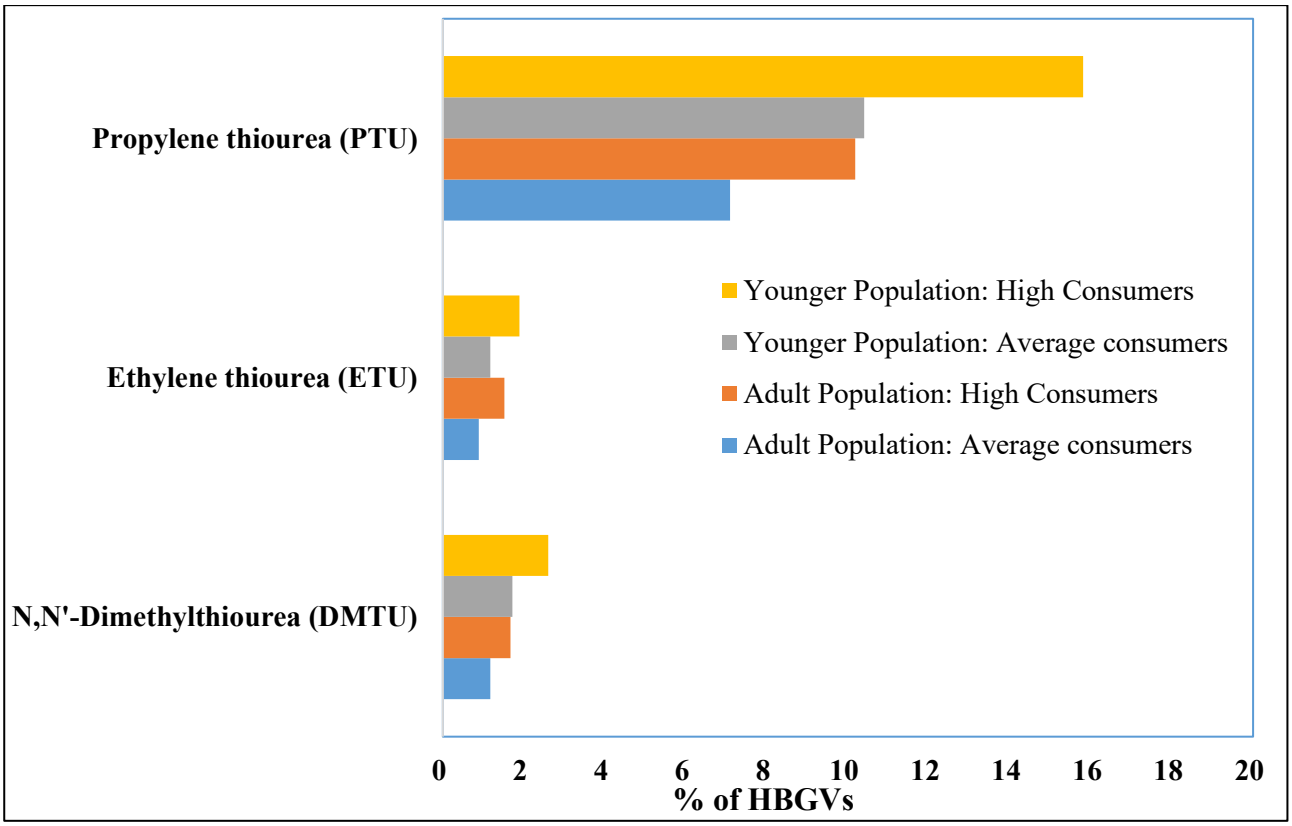

Figure 4: Dietary Exposure Estimates (Upper Bound) to Dithiocarbamate (DTC) Metabolites for Average and High Consumers of the Adult and Younger Populations Expressed as Percentages of the Health-based Guidance Values (HBGVs)

3.36 A detailed subgroup analysis of dietary exposure to the three DTC metabolites across individual age-gender populations subgroups was performed and the results are given in Appendix F. The dietary exposure estimates (upper bound) of the two DTC metabolites (i.e. DMTU and ETU) for both average and high consumers within adult and younger populations were below 3% of their respective HBGVs while those of PTU were between 6.5% and 17% of its HBGV.

3.37 The study findings reveal that all dietary exposure estimates were below their respective HBGVs, and therefore dietary exposure to the three DTC metabolites is unlikely to pose health risks to both average and high consumers in the local adult and younger populations.

Other Pesticides

Concentrations of Other Tested Pesticides in TDS Foods

3.38 A total of 374 composite samples comprising 187 TDS food items involving 15 food groups, collected and prepared on two separate sampling occasions, were tested for 26 other pesticides. Among the 26 other pesticides included in this study for testing, 20 were detected in one or more of the 374 composite samples analysed. The six non-detected pesticides are listed in Appendix A.

3.39 The numbers of composite samples with detectable levels of the individual pesticides across TDS food groups are summarised in Table 9. The individual TDS food items with the detection of 20 other pesticides are given in Table D.5 of Appendix D. The levels of individual other pesticides found in each TDS food item are provided in Part E.5 of Appendix E.

Table 9: Numbers of Composite Samples in TDS Food Groups of the 2nd HKTDS with Detectable Levels of Other Pesticides Tested

	Food group	No. composite samples analysed	No. composite samples with detectable level																			
			Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
1	Cereals and their products	42	1	0	0	0	0	0	0	0	1	0	30	0	13	2	0	1	0	0	4	0
2	Vegetables and their products	84	18	0	4	18	1	4	0	0	7	16	50	3	2	0	2	37	4	7	52	7
3	Legumes, nuts and seeds and their products	18	1	0	0	0	3	0	0	0	0	3	14	2	2	0	0	3	0	0	4	1
4	Fruits	36	0	0	4	0	0	10	1	1	0	12	31	8	0	0	2	9	0	0	16	2
5	Meat, poultry and game and their products	34	0	0	0	0	0	0	0	0	7	0	33	0	0	0	0	11	0	0	3	0
6	Egg and their products	6	0	0	0	0	0	0	0	0	2	0	6	0	0	0	0	3	0	0	0	0
7	Fish, seafood and their products	48	0	0	0	0	0	0	0	0	5	0	40	5	0	0	0	14	1	0	1	0
8	Dairy products	16	0	0	0	0	0	0	0	0	2	0	14	0	0	1	0	7	0	0	0	0
9	Fats and oils	4	0	1	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	1	0
10	Beverages, alcoholic	4	4	0	0	0	0	1	0	2	0	0	4	0	0	0	0	0	0	0	0	0
11	Beverages, non-alcoholic	24	0	0	0	0	0	0	0	0	2	1	14	1	4	1	0	3	0	0	2	0
12	Mixed dishes	24	2	0	0	4	0	0	0	0	2	2	23	0	10	0	0	3	1	1	10	2
13	Snack foods	2	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	2	0	1	0
14	Sugars and confectionery	10	0	0	0	0	0	0	0	1	0	1	4	0	0	2	0	0	0	0	1	0
15	Condiments, sauces and herbs	22	4	2	1	2	0	1	0	0	3	4	13	1	3	0	0	4	0	1	4	4
	Total	374	30	3	9	24	4	16	1	4	33	41	279	21	34	6	4	95	8	9	99	16

3.40 Among the 20 other pesticides with detectable levels, the most commonly detected pesticide residue was fosetyl aluminium (detected in 279 composite samples (75%) from 158 TDS food items), followed by pyraclostrobin (detected in 99 composite samples (26%) from 61 TDS food items), and lufenuron (detected in 95 composite samples (25%) from 60 TDS food items) (Table 9 and Table D.5 of Appendix D). The remaining 17 other pesticides were each detected in less than 11% of the total composite samples (Table 9).

3.41 The residue levels of the three most commonly detected pesticides among all 187 TDS food items are summarised as follows. For fosetyl aluminium, the highest level was found in durian (mean (upper bound): 13,000 μg/kg), followed by tree nuts (mean (upper bound): 7,100 μg/kg) and onion (mean (upper bound): 3,000 μg/kg) (Part E.5 in Appendix E). For pyraclostrobin, the highest level was found in spring onion (mean (upper bound): 310 μg/kg), followed by cabbage, Chinese flowering (mean (upper bound): 210 μg/kg), pea shoots and watercress (both with mean (upper bound): 65 μg/kg) (Part E.5 in Appendix E). For lufenuron, the highest levels was found in Chinese parsley (mean (upper bound): 240 μg/kg), followed by Chinese kale (mean (upper bound): 68 μg/kg) and Chinese amaranth (mean (upper bound): 36 μg/kg) (Part E.5 in Appendix E).

3.42 Foods of plant origin were more commonly found to have detectable levels of the 15 other pesticides (except lufenuron, fipronil and fosetyl aluminium) (Table 9). For instance, among the four food groups of plant origin (i.e. "cereal and their products", "vegetables and their products", "legumes, nuts and seeds and their products" and "fruits"), 42% (76 out of 180) of composite samples had detectable levels of pyraclostrobin. In contrast, only 3.8% (4 out of 104) of composite samples from the four food groups of animal origin (i.e. "meat, poultry and game and their products", "egg and their products", "fish and seafood and their products" and "dairy products") were found to have detectable levels of pyraclostrobin (Table 9).

3.43 Notably, apart from foods of plant origin, lufenuron and fipronil were also relatively more commonly detected in foods of animal origin, albeit at low levels in general (< 10 μg/kg and < 2 μg/kg in the majority of composite samples respectively). Higher levels of lufenuron were detected in mangrove red snapper (mean (upper bound): 35 μg/kg) and mandarin fish (mean (upper bound): 15 μg/kg). The

proportions of composite samples with detectable levels of lufenuron were 28% (50 out of 180 composite samples) and 34% (35 out of 104 composite samples) in the four food groups of plant origin and the four food groups of animal origin respectively. For fipronil, the proportions with detectable levels were 4.4% (8 out of 180 composite samples) and 15% (16 out of 104 composite samples) in the four food groups of plant origin and the four food groups of animal origin, respectively. Since lufenuron can be used as both pesticide and veterinary drug, residues could be present in foods of plant and animal origins. As for fipronil, mainly the metabolite fipronil sulfone, rather than the parent compound, was detected in the composite samples in the four food groups of animal origin. Although fipronil is not recommended for use in food producing animals, the presence of the fipronil sulfone in foods of animal origin is likely to be originated from the application of fipronil in crop production, followed by its degradation in soil and in turn contamination in water and feed.[29,30]

3.44 In this study, fosetyl aluminium (which was analysed in the form of fosetyl and phosphonic acid with reference to the residue definition) were found in a wide variety of food across the 15 TDS food groups, with phosphonic acid being detected in all positive composite samples while fosetyl was detected in only two composite samples. Residues of fosetyl aluminium was frequently detected in this study, this finding consistent with other related studies.[31,32,33] It is worthy to note that the presence of phosphonic acid is not just only arising from the uses of pesticides containing fosetyl aluminium or salts of phosphonic acid, but also the degradation of organophosphonates released from industry and households, as well as the reaction of natural organophosphonates in microorganisms, fungi, plants and animals.[31] In addition, phosphonic acid is persistent in soil and can remain in plants for extended periods, leading to contamination from previous pesticide applications.[31]

Dietary Exposure to Other Pesticides

3.45 Table 10 shows the dietary exposure estimates of the local population to the 20 other pesticide residues. Among the 20 other pesticides detected in the TDS foods, dietary exposure estimates (upper bound) for adult population ranged from 0.0044 μg/kg bw/day (fenazaquin and fenpyrazamine) to 5.2 μg/kg bw/day (fosetyl aluminium) for average consumers, and from 0.0063 μg/kg bw/day (fenazaquin and fenpyazamine) to 7.9 μg/kg bw/day (fosetyl aluminium) for high consumers, whereas those of younger population ranged from 0.0065 μg/kg bw/day (fenazaquin and fenpyazamine) to 7.2 μg/kg bw/day (fosetyl aluminium) for average consumers, and from 0.0098 μg/kg bw/day (fenazaquin and fenpyazamine) to 12 μg/kg bw/day (fosetyl aluminium) for high consumers. The dietary exposure estimates (upper bound) for average and high consumers in both adult and younger populations to the 20 other pesticides detected, with the exception of fipronil and glufosinate ammonium, were all below 2% of their respective HBGVs (Table 10 and Figure 5). The dietary exposure estimates (upper bound) to fipronil were 20% and 28% of its HBGV for average consumers and 28% and 43% of its HBGV for high consumers in the adult and younger populations, respectively; whereas those to glufosinate ammonium were 3.0% and 4.3% of its HBGV for average consumers and 4.2% and 6.6% of its HBGV for high consumers in the adult and younger populations, respectively (Table 10 and Figure 5).

Table 10: Dietary Exposure Estimates (μg/kg bw/day) to Other Pesticides for Average and High Consumers of the Local Adult and Younger Populations and their Contribution to Health-based Guidance Values (HBGVs)

	HBGVs (mg/ kg bw/ day)	Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs) (LB-UB)[a, b]			
		Adult		Younger population	
		Average consumers	High consumers [d]	Average consumers	High consumers [d]
Ametoctradin	10	0.020-0.061 (0%)	0.017-0.077 (0%)	0.030-0.096 (0%)	0.025-0.14 (0%)
Bixafen	0.02	0-0.0090 (0%)	0-0.013 (0-0.064%)	0-0.013 (0-0.066%)	0-0.020 (0-0.10%)
Cyantraniliprole	0.03	0-0.0047 (0%)	0.00094-0.0067 (0%)	0-0.0067 (0%)	0.00097-0.010 (0%)
Cyazofamid	0.2	0.031-0.052 (0%)	0.097-0.12 (0-0.060%)	0.033-0.065 (0%)	0.10-0.13 (0.052-0.067%)
Cyflumetofen	0.1	0.00098-0.29 (0-0.29%)	0.0014-0.41 (0-0.41%)	0.0012-0.43 (0-0.43%)	0.00082-0.65 (0-0.65%)
Ethephon	0.05	0.032-0.14 (0.063-0.29%)	0.099-0.23 (0.20-0.46%)	0.051-0.22 (0.10-0.43%)	0.16-0.37 (0.31-0.75%)
Fenazaquin	0.05	0-0.0044 (0%)	0-0.0063 (0%)	0-0.0065 (0%)	0-0.0098 (0%)
Fenpyrazamine	0.3	0-0.0044 (0%)	0-0.0063 (0%)	0-0.0065 (0%)	0-0.0098 (0%)
Fipronil	0.0002	0.0024-0.039 (1.2-20%)	0.0066-0.055 (3.3-28%)	0.0028-0.057 (1.4-28%)	0.0059-0.086 (3.0-43%)
Fluxapyroxad	0.02	0.011-0.015 (0.053-0.074%)	0.022-0.027 (0.11-0.14%)	0.012-0.018 (0.058-0.088%)	0.028-0.035 (0.14-0.18%)
Fosetyl aluminium	1	4.9-5.2 (0.49-0.52%)	7.4-7.9 (0.74-0.79%)	6.7-7.2 (0.67-0.72%)	11-12 (1.1-1.2%)
Glufosinate ammonium	0.01	0.0090-0.30 (0.090-3.0%)	0.026-0.42 (0.26-4.2%)	0.012-0.43 (0.12-4.3%)	0.034-0.66 (0.34-6.6%)
Glyphosate	1	0.067-0.72 (0-0.072%)	0.15-1.0 (0-0.10%)	0.097-1.1 (0-0.11%)	0.22-1.6 (0-0.16%)
Isofetamid	0.05	0-0.023 (0%)	0-0.034 (0-0.068%)	0-0.037 (0-0.073%)	0-0.058 (0-0.12%)
Isopyrazam	0.06	0.00066-0.0050 (0%)	0-0.0067 (0%)	0.00062-0.0070 (0%)	0.00064-0.010 (0%)
Lufenuron	0.02	0.017-0.020 (0.084-0.10%)	0.040-0.044 (0.20-0.22%)	0.021-0.027 (0.11-0.13%)	0.052-0.059 (0.26-0.30%)
Maleic hydrazide	0.3	0.26-0.53 (0.086-0.18%)	0.85-1.1 (0.28-0.38%)	0.76-1.2 (0.25-0.39%)	2.3-2.7 (0.75-0.90%)
Oxathiapiprolin	4	0.0035-0.37 (0%)	0.0059-0.53 (0%)	0.0044-0.54 (0%)	0.0073-0.82 (0%)
Pyraclostrobin	0.03	0.23-0.24 (0.77-0.79%)	0.56-0.56 (1.9-1.9%)	0.20-0.21 (0.68-0.69%)	0.53-0.54 (1.8-1.8%)
Pyriproxyfen	0.1	0.00052-0.0049 (0%)	0.00097-0.0071 (0%)	0.00089-0.0072 (0%)	0.0019-0.011 (0%)

a LB and UB denote lower bound and upper bound respectively.

b Figures for dietary exposure estimates and % contribution to HBGVs are rounded to two significant figures.

c Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates while values of "0%" denote < 0.05% of contribution to HBGVs.

d Exposure estimates of high consumers refer to the exposure estimates at 90th percentile.

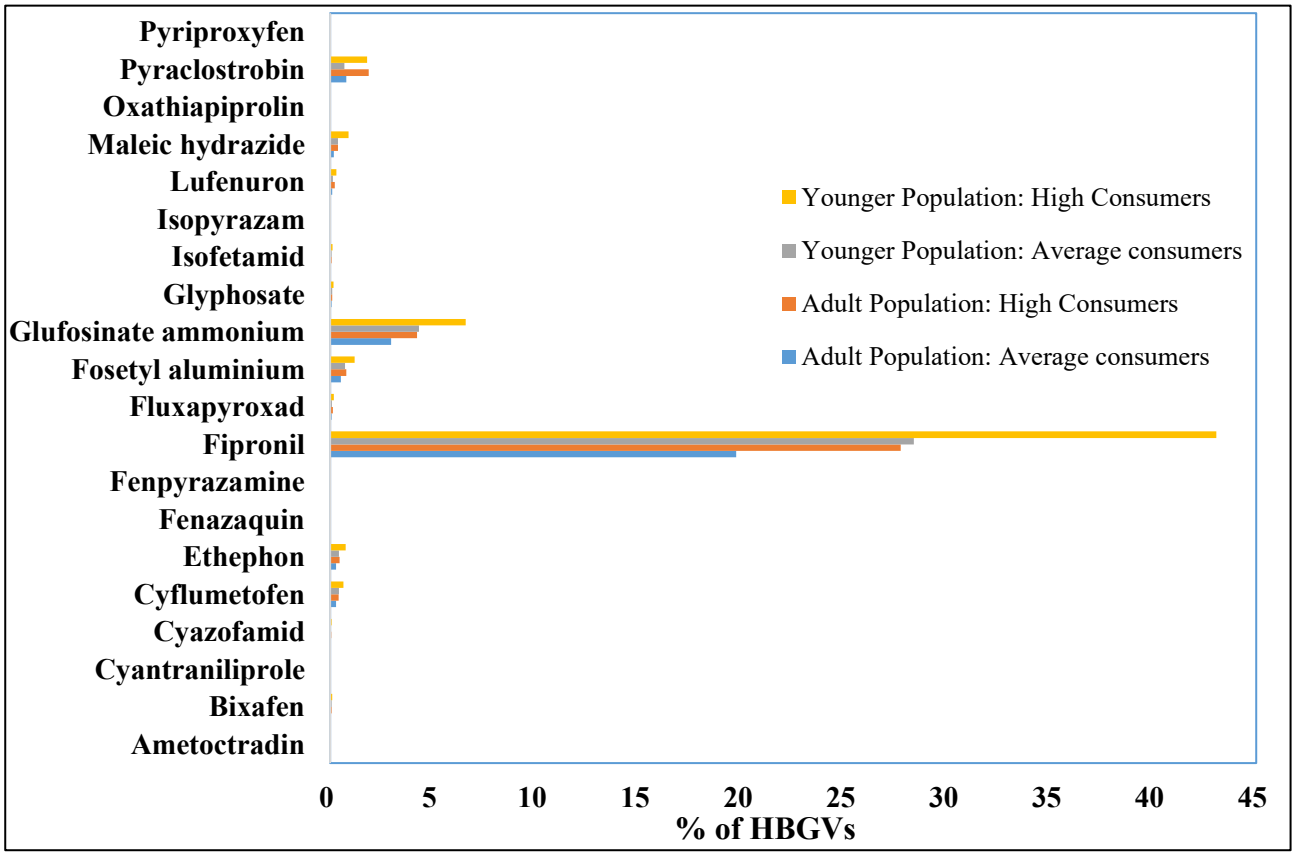

Figure 5: Dietary Exposure Estimates (Upper Bound) to Other Pesticides for Average and High Consumers of the Adult and Younger Populations Expressed as Percentages of the Health-based Guidance Values (HBGVs)

3.46 A detailed subgroup analysis of dietary exposure to the 20 other pesticides across individual age-gender population subgroups was performed and the results are given in Appendix F. The dietary exposure estimates (upper bound) of the individual age-gender population subgroups among average and high consumers within the adult and younger populations were all below their respective HBGVs (≤ 48% for fipronil and < 8% for the other remaining pesticides).

3.47 The study findings reveal that all dietary exposure estimates were below their respective HBGVs, and therefore dietary exposure to these other pesticides is unlikely to pose health risks to both average and high consumers in the local adult and younger populations.

Comparison of Dietary Exposure Estimates

Comparison with the 1st HKTDS

3.48 The 45 OPPs, the 16 carbamates and the two out of three DTC metabolites (i.e. ETU and PTU) analysed in this study were studied in the 1st HKTDS for the local adult population. Among them, 22 OPPs and seven carbamates were not detected in any samples in both this study and the 1st HKTDS. Table 11 compares the dietary exposure estimates to OPPs, carbamates and the DTC metabolites of the local adult population from this study with those obtained from the 1st HKTDS [34]. The findings indicate that the dietary exposure levels were comparable to or lower than those reported in the 1st HKTDS. Importantly, both studies have independently concluded that dietary exposure to the analysed OPPs, carbamates and DTC metabolites in the local adult population is unlikely to pose health risks.

3.49 However, direct comparison between results of these two studies should be made with caution, as differences exist in the laboratory analytical methods where lower LODs have been achieved in this study, changes have been made to the residue definitions for certain analysed pesticides (e.g. the residue definitions for acephate and carbosulfan have been extended to cover also methamidophos and carbofuran respectively in this study), changes have been made to the HBGVs for some pesticides (e.g. lower HBGVs for diazinon and dimethoate applied for this study).

Table 11: A Comparison of Dietary Exposure Estimates (μg/kg bw/day) to the Organophosphorus Pesticides (OPPs), Carbamates and Dithiocarbamate (DTC) metabolites for the Local Adult Population with the 1st HKTDS

	Dietary exposure estimates (lower bound)[a] (μg/kg bw/day) (% Contribution to the health-based guidance values (HBGVs)) [b]			
	This Study		1st HKTDS [c]	
	Average consumers	High consumers [d]	Average consumers	High consumers [d]
OPPs [e]				
Acephate	0.00074 (0%)	0.00082 (0%)	0.017 (0.1%)	0.059 (0.2%)
Chlorpyrifos	0.0030 (0%)	0.0063 (0.063%)	0.010 (0.1%)	0.041 (0.4%)
Chlorpyrifos methyl	0 (0%)	0.0016 (0%)	0 (0%)	0.002 (0%)
Diazinon	0 (0%)	0 (0%)	0 (0%)	0.001 (0%)
Dichlorvos	0.0022 (0.056%)	0.0082 (0.20%)	—	—
Dimethoate	0.0017 (0.17%)	0.0022 (0.22%)	0.105 (5.2%)	0.476 (23.8%)
Disulfoton	0 (0%)	0 (0%)	—	—
Edifenphos	0 (0%)	0 (0%)	—	—
Ethion	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Fenthion	0.0028 (0%)	0.0029 (0%)	0 (0%)	0 (0%)
Fosthiazate	0.0011 (0%)	0.0030 (0.075%)	0.001 (0.1%)	0 (0%)
Isocarbophos	0.0011 (0%)	0.0026 (0.087%)	0.006 (0.2%)	0.021 (0.7%)
Isofenphos methyl	—	—	0 (0%)	0 (0%)
Malathion	0 (0%)	0.00064 (0%)	0 (0%)	0.001 (0%)
Methamidophos	0 (0%)	0 (0%)	0.002 (0.1%)	0.008 (0.2%)
Methidathion	0 (0%)	0 (0%)	—	—
Phorate	0 (0%)	0 (0.068%)	0.004 (0.6%)	0.022 (3.2%)
Phoxim	0.0069 (0.17%)	0.018 (0.44%)	0.024 (0.6%)	0.113 (2.8%)
Pirimiphos methyl	0.0010 (0%)	0.0024 (0%)	0 (0%)	0.002 (0%)
Profenofos	0.0011 (0%)	0.0027 (0%)	0.001 (0%)	0.004 (0%)
Tolclofos methyl	—	—	0 (0%)	0 (0%)
Triazophos	0 (0%)	0 (0%)	0.001 (0.1%)	0.003 (0.3%)
Trichlorfon	0 (0%)	0 (0%)	0 (0%)	0 (0.1%)
Carbamates [f]				
Aldicarb	—	—	0.001 (0%)	0.008 (0.3%)
Carbaryl	0 (0%)	0 (0%)	—	—
Carbosulfan [g]	0.0038 (0%)	0.0039 (0%)	0 (0%)	0.001 (0%)
Fenobucarb (BPMC)	0 (0%)	0 (0%)	0 (0%)	0.002 (0%)
Isoprocarb	0.00075 (0%)	0.0016 (0.079%)	0.001 (0%)	0.005 (0.2%)
Methomyl	0.00096 (0%)	0.0019 (0%)	0.006 (0%)	0.019 (0.1%)
Oxamyl	0.0010 (0%)	0.0037 (0%)	0 (0%)	0.003 (0%)
Pirimicarb	0 (0%)	0 (0%)	—	—
Propamocarb	0.10 (0%)	0.20 (0%)	0.291 (0.1%)	1.145 (0.3%)
DTC metabolites				
Ethylene thiourea (ETU)	0.013 (0.32%)	0.034 (0.86%)	0.040 (1.0%)	0.107 (2.7%)
Propylene thiourea (PTU)	0 (0.12%) [h]	0.0012 (0.39%)	0.002 (0.7%)	0.011 (3.8%)

a Lower bound values of dietary exposure estimates were compared since only lower bound values were reported in 1st HKTDS.
b Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates while values of "0%" denote < 0.05% of contribution to HBGVs. "—" denotes non-detected in all samples.
c Data are extracted from the 1st HKTDS. Figures for dietary exposure estimates and contributions to HBGVs were rounded to three and one decimal places, respectively.
d The 90th and 95th percentile exposure levels were used to represent the dietary exposure estimates of high consumers of the adult population in this study and the 1st HKTDS, respectively.
e Only 23 OPPs with detectable results in either one of the studies are showed in the table. The remaining 22 analysed OPPs were not detected in all samples in both this study and the 1st HKTDS.
f Only the nine carbamates with detectable results in either one of the studies are showed in the table. The remaining seven analysed carbamates were not detected in all samples in both this study and the 1st HKTDS.
g In view of the latest evaluation conducted by JMPR in 2023, the dietary exposure estimates to carbosulfan in this study have taken into account the contribution from carbofuran (where a factor of 10 was applied for converting both the concentrations of its metabolites, carbofuran and 3-hydroxycarbofuran, expressed as carbosulfan). In contrast, the estimates to carbosulfan and carbofuran were reported individually in the 1st HKTDS, where the dietary exposure to carbofuran was reported as 0.002 μg/kg bw/day (0.2% of its HBGV) and 0.010 μg/kg bw/day (1.0% of its HBGV) for average and high consumers of the adult population respectively.
h This % of contribution to HBGV was derived from dietary exposure estimate of 0.00037 μg/kg bw/day and HBGV of 0.0003 mg/kg bw/day.

Comparison with Other Places

3.50 The data on the dietary exposure to the analysed pesticide or metabolite residues locally and those reported in other places [28,35,36,37] were summarised in Tables G.1-G.5 of Appendix G. No relevant data reported in other places were identified for some (13) analysed pesticides or metabolites, particularly those for other individual pesticides (9). In fact, most of them have only been introduced in the market and evaluated by JMPR in recent decades while a few of them have not yet been evaluated by JMPR. Therefore, dietary exposure data from other places are scarce.

3.51 The available dietary exposure estimates for Hong Kong, Australia, New Zealand, France, and Chinese Mainland indicate that population exposure to the analysed pesticides were generally below their respective HBGVs. The sole exception was observed in France, where upper bound exposure estimates for a limited number of pesticides exceeded their corresponding HBGVs.

3.52 However, direct comparison between results of studies between different countries should be made with caution. It is important to consider several methodological variations in these studies, including: the time periods of study execution, approaches to consumption data collection, laboratory analytical methods, treatment of results below detection limits, as well as differences in residue definitions and adopted HBGVs for specific pesticides.

Overall Summary

Pesticide or Metabolite Residues Detected in TDS Foods

3.53 A total of 101 pesticides or metabolites including 75 from four groups, namely neonics (11), OPPs (45), carbamates (16), and DTC metabolites (3), along with 26 other individual pesticides, were analysed in 374 composite samples involving 187 TDS food items. Overall, 39 pesticides or metabolites (39% of pesticides or metabolites analysed) were not detected in any composite samples while the remaining 62 pesticides or metabolites (61%) were detected at low levels in the composite samples, either singly or in combination.

3.54 Foods of plant origin were more likely than foods of animal origin to have detectable levels for most analysed pesticides or metabolite residues. On the other hand, 10 TDS food items (including rice noodles, corn starch, mung bean sprout, coconut water, carbonated drink, two water items, two sugar items and table salt) were not detected with any of the 101 pesticide or metabolite residues in all the composite samples analysed.

3.55 Across the four groups of pesticides or metabolites analysed, neonics was the most commonly detected pesticide group (detected in 183 composite samples

(49%), highest mean level (upper bound) was 460 μg/kg of THI in Chinese kale), followed by OPPs (detected in 138 composite samples (37%), highest mean level (upper bound) was 180 μg/kg of phoxim in sesame seed oil), carbamates (detected in 99 composite samples (26%), highest mean level (upper bound) was 850 μg/kg of propamocarb in Chinese amaranth (Chinese spinach)) and DTC metabolites (detected in 38 composite samples (10%), highest mean level (upper bound) was 65 μg/kg of ETU in watercress) (Appendix E).

3.56 Among those 26 other pesticides, the most commonly detected pesticide was fosetyl aluminium (detected in 279 composite samples (75%) with the highest mean level (upper bound) at 13,000 μg/kg in durian), followed by pyraclostrobin (detected in 99 composite samples (26%) with the highest mean level (upper bound) at 310 μg/kg in spring onion) and lufenuron (detected in 95 composite samples (25%) with the highest mean level (upper bound) at 240 μg/kg in Chinese parsley) (Appendix E).

Dietary Exposure to the Pesticides or Metabolites Analysed

3.57 Table 12 presents the ranges of contribution of dietary exposure estimates (upper bound) of the Hong Kong population to the 62 pesticide or metabolite residues detected in this study to the health-based guidance values (HBGVs). The analysis indicates that dietary exposure levels for both adult and younger populations remained below the established HBGVs for all 62 pesticide residues or metabolites detected.

Table 12: Ranges of % Contribution of Dietary Exposure Estimates (Upper bound) to the Pesticides or Metabolites Detected to their Health-based Guidance Values (HBGVs) for Average and High Consumers of the Local Adult and Younger Populations

Pesticides or metabolites (No. detected)	Range of % contribution of dietary exposure estimates (Upper bound) to HBGVs [a, b, c]			
	Adult		Younger population	
	Average consumers	High consumers [d]	Average consumers	High consumers [d]
Neonicotinoids (10)	0-0.20%	0-0.31%	0-0.28%	0-0.48%
Organophosphorus pesticides (OPPs) (21)	0-14%	0-20%	0-20%	0-31%
Carbamates (8)	0-0.96%	0-1.4%	0-1.4%	0-2.2%
Dithiocarbamate metabolites (3)	0.89-7.1%	1.5-10%	1.2-10%	1.9-16%
Other pesticides (20)	0-20%	0-28%	0-28%	0-43%

a Upper bound values are presented.
b Figures for % contribution of dietary exposure estimates to HBGVs are rounded to two significant figures.
c Values of "0%" denote < 0.05% of contribution to HBGVs.
d Exposure estimates of high consumers refer to the exposure estimates at 90th percentile.

3.58 The majority of pesticide or metabolite residues contributed to less than 5% of their respective HBGVs for both average and high consumers in the adult and younger populations, except five residues, namely disulfoton, fipronil, glufosinate ammonium, phorate and propylene thiourea (PTU) (their contribution to their HBGVs ranged from 3.0-20% and 4.3-28% for average consumers, and 4.2-28% and 6.6-43% for high consumers, in the adult and younger populations, respectively).

3.59 For the sake of completeness, the dietary exposure estimates were also calculated for the 39 pesticides with non-detectable levels in relation to the percentage contribution to the respective HBGVs. Dietary exposure estimates (upper bound) to the majority of the non-detected pesticides (36 pesticides) contributed to less than 10% of respective HBGVs in the adult and younger populations. The three non-detected pesticides with contribution over 10% of HBGVs are all OPPs, namely dicrotophos,

oxydemeton methyl and terbufos, in the ranges of % contribution to HBGVs from 11% (for oxydemeton methyl) to 22% (for dicrotophos) and from 16% to 31% for average and high consumers, respectively, in the adult population, and from 16% to 32% and from 24% to 49% for average and high consumers, respectively, in the younger population.

3.60 The study findings indicate that dietary exposure to all 101 pesticide or metabolite residues is unlikely to pose health risks to both average and high consumers in the local adult and younger populations.

3.61 It is worth noting that some pesticides demonstrated higher percentage contributions to HBGVs in the upper-bound exposure estimates despite being non-detected (i.e. left-censored or below LOD) in all or most samples. The two most notable cases were dicrotophos (non-detected in all samples) and fipronil (non-detected in 91% of samples), which showed contributions of 49% and 43% respectively for high consumers in the younger population. Such findings appear to be primarily attributable to the relatively low HBGVs established for these pesticides, and/or comparatively higher LODs achieved by the testing methods adopted. For the case of dicroptophos, due to a relatively low HBGV (0.00002 mg/kg bw/day), the dietary exposure to dicrotophos contributed to its HBGV in a large portion even though the LODs have already been achieved at the lowest values in this study (i.e. 0.15 μg/kg in food and 0.02 μg/kg in water). For the case of fipronil, the LODs of fipronil thioether (one of the metabolites of fipronil) in food and water, respectively, can only be achieved at levels with 5-fold and 7.5-fold higher than the lowest LODs of this study. Notably, even under this conservative approach, the dietary exposure estimates of all studied populations were still below their HBGVs.

Limitations of the Study

3.62 While the majority of metabolites covered by the residue definition of the pesticides were analysed, some metabolites of certain pesticides were not analysed in the 2nd HKTDS due to several practical challenges. These included updates in residue definitions and time constraints in testing. For instance, difluoroacetic acid (DFA), a metabolite of flupyradifurone, cannot be analysed with the use of the current adopted multi-residue analytical methods. Moreover, new metabolites have been added in the residue definition for pesticides, carbosulfan and phosmet, in 2023 and 2024 respectively, by JMPR [7], however, the current adopted analytical methods could not be extended to cover their metabolites, i.e. 3-hydroxy-7-phenol and 3-keto-7-phenol for carbosulfan, and phosmet oxon for phosmet due to the tight analytical schedule. These factors may potentially result in underestimation of the total dietary exposure.

3.63 A more comprehensive discussion on other limitations have been described in the Report on the 2nd HKTDS: Methodology.[26]

Chapter 4

Conclusions and Recommendations

4.1 The analysis revealed that pesticides or metabolites analysed in this study were either not detected in any samples or found at low levels in food samples, across the four groups of pesticides or their metabolites, namely neonicotinoids (neonics), organophosphorus pesticides (OPPs), carbamates and dithiocarbamate (DTC) metabolites, as well as the 26 other pesticides. These residues were predominantly found in plant-based food items, particularly in vegetables and fruits.

4.2 Comprehensive assessment demonstrated that dietary exposure estimates to all 101 analysed pesticide or metabolite residues for Hong Kong's population were below their respective HBGVs. These results indicate that current dietary exposure estimates to all pesticide or metabolite residues analysed in this study are unlikely to pose health risks to both average and high consumers in the local adult and younger populations.

4.3 The findings reaffirmed the safety of fundamental dietary advice on healthy eating, emphasising the importance of maintaining a balanced and varied diet which includes a wide variety of fruits and vegetables.

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Appendix A

Health-based guidance values (HBGVs)[#] (mg/kg body weight (bw)/day) of pesticides or metabolites covered by the 2nd HKTDS

	Health-based Guidance Values (mg/kg bw/day)	Source [@]	Year
Neonicotinoids (n=11)			
Acetamiprid (ACE)	0.07	JMPR	2011
Clothianidin (CLO)	0.1	JMPR	2010
Cycloxaprid (CYC) *	0.005	GB2763-2021	2021
Dinotefuran (DIN)	0.2	JMPR	2012
Flupyradifurone (FLU)	0.08	JMPR	2015
Imidacloprid (IMI)	0.05	JECFA	2024
Imidaclothiz (IMID)	0.025	GB2763-2021	2021
Nitenpyram (NIT)	0.53	GB2763-2021	2021
Sulfoxaflor (SUL)	0.05	JMPR	2011
Thiacloprid (THIA)	0.01	JMPR	2006
Thiamethoxam (THI)	0.08	JMPR	2010
Organophosphorus pesticides (OPPs) (n=45)			
Acephate	0.03	JMPR	2005
Azinphos methyl *	0.03	JMPR	2007
Cadusafos *	0.0005	JMPR	2009
Chlorpyrifos	0.01	JMPR	1999
Chlorpyrifos methyl	0.01	JMPR	2009
Coumaphos *	0.0003	GB2763-2021	2021
Diazinon	0.003	JMPR	2016
Dichlorvos	0.004	JMPR	2011
Dicrotophos *	0.00002 (cPAD)	USEPA	2006
Dimethoate *(including omethoate)*	0.001	JMPR	2019
Disulfoton	0.0003	JMPR	1991
Edifenphos	0.003	JMPR	1981
Ethion	0.002	JMPR / JECFA	2021 / 2017
Ethoprophos *	0.0004	JMPR	1999
Fenamiphos *	0.0008	JMPR	1997
Fenitrothion *	0.006	JMPR	2007
Fenthion	0.007	JMPR	1995
Fosthiazate	0.004	GB 2763-2021	2021
Isocarbophos	0.003	GB 2763-2021	2021
Isofenphos methyl *	0.003	GB 2763-2021	2021

	Health-based Guidance Values (mg/kg bw/day)	Source @	Year
Malathion	0.3	JMPR	2016
Methamidophos	0.004	JMPR	2002
Methidathion	0.002	JMPR	2022
Mevinphos *	0.0008	JMPR	1996
Monocrotophos *	0.0006	JMPR	1993
Naled *	0.002	GB 2763-2021	2021
Oxydemeton methyl *	0.0003	JMPR	1989/2002
Parathion *	0.004	JMPR	1995
Parathion methyl *	0.003	JMPR	1995
Phenthoate *	0.003	JMPR	1984
Phorate	0.0007	JMPR	2004
Phosalone *	0.02	JMPR	1997/2001
Phosmet *	0.006	JMPR	2024
Phosphamidon *	0.0005	JMPR	1986
Phoxim	0.004	JECFA	1999/2004
Pirimiphos methyl	0.03	JMPR	1992
Profenofos	0.03	JMPR	2007
Prothiophos *	0.0001	APVMA	1993
Quinalphos *	0.0005	GB 2763-2021	2021
Terbufos *	0.0006	JMPR	2003
Tolclofos methyl *	0.07	JMPR	1994/2019
Triazophos	0.001	JMPR	2002
Tribufos *	0.0005 (cMRLs)	ATSDR	2020
Trichlorfon	0.002	JECFA	2006
Vamidothion *	0.008	JMPR	1988
Carbamates (n=16)			
Alkyl or Aryl Carbamate			
Aldicarb*	0.003	JMPR	1992
Benfuracarb*	0.01	EFSA	2009
Carbaryl	0.008	JMPR	2001
Carbosulfan *(including carbofuran)*	0.01	JMPR	2023
Fenobucarb (BPMC)	0.06	GB 2763-2021	2021
Formetanate hydrochloride *	0.004	EFSA	2006
Isoprocarb	0.002	GB 2763-2021	2021
Methiocarb *	0.02	JMPR	1998
Methomyl	0.02	JMPR	2001
Oxamyl	0.009	JMPR	2002/2017
Phenmedipham *	0.03	GB 2763-2021	2021
Pirimicarb	0.02	JMPR	2004

	Health-based Guidance Values (mg/kg bw/day)	Source @	Year
Propamocarb	0.4	JMPR	2005
Thiocarbamate			
Butylate *	0.05 (cRfD)	USEPA	1993
Cycloate *	0.005 (cPAD)	USEPA	2004
Molinate *	0.002 (TDI)	WHO Guidelines for Drinking-water Quality	2003
Dithiocarbamate (DTC) metabolites (n=3)			
N,N'-Dimethylthiourea (DMTU)	0.001	EFSA	2019
Ethylene thiourea (ETU)	0.004	JMPR	1993
Propylene thiourea (PTU)	0.0003	JMPR	1999
Other pesticides (n=26)			
Ametoctradin	10 †	GB 2763-2021	2021
Benzovindiflupyr *	0.05	JMPR	2013
Bixafen	0.02	JMPR	2013
Cyantraniliprole	0.03	JMPR	2013
Cyazofamid	0.2	JMPR	2015
Cyflumetofen	0.1	JMPR	2014
Ethephon	0.05	JMPR	2015
Ethiprole *	0.005	JMPR	2018
Fenazaquin	0.05	JMPR	2017
Fenpyrazamine	0.3	JMPR	2017
Fipronil	0.0002	JMPR	2021
Fluensulfone *	0.01	JMPR	2013
Fluxapyroxad	0.02	JMPR	2018
Fosetyl aluminium *(expressed as phosphonic acid)*	1	JMPR	2017
Glufosinate ammonium	0.01	JMPR	2012
Glyphosate	1	JMPR	2016
Imazamox *	3	JMPR	2014
Imazapic *	0.7	JMPR	2013
Isofetamid	0.05	JMPR	2016
Isopyrazam	0.06	JMPR	2011
Lufenuron	0.02	JMPR / JECFA	2015/ 2017
Maleic hydrazide	0.3	JMPR	1996
Oxathiapiprolin	4	JMPR	2016
Pyraclostrobin	0.03	JMPR	2003/2018
Pyriproxyfen	0.1	JMPR	1999
Sedaxane *	0.1	JMPR	2012

Notes

For Health-based Guidance Values (HBGVs), Acceptable Daily Intakes (ADIs) are referred unless otherwise specified as listed below:
cPAD stands for Chronic Population Adjusted Dose (cPAD); cMRL stands for Chronic Minimal Risk Level; cRfD stands for Chronic Reference Dose; and TDI stands for Tolerable Daily Intake.

@ JMPR stands for the Joint Food and Agriculture Organization of the United Nations (FAO) / World Health Organization (WHO) Meeting on Pesticide Residues;
GB 2763-2021 stands for the National Standard of People's Republic of China (PRC) GB2763-2021 on pesticide residues;
USEPA stands for the United States Environmental Protection Agency;
JECFA stands for the Joint FAO/WHO Expert Committee on Food Additives;
APVMA stands for the Australian Pesticides and Veterinary Medicines Authority;
ATSDR stands for the Agency for Toxic Substances and Disease Registry; and
EFSA stands for the European Food Safety Authority.
ADIs established by JMPR are available from URL:
http://www.fao.org/agriculture/crops/core-themes/theme/pests/lpe/en/

* Substances were not detected in all samples.

† JMPR considered that an ADI for ametoctradin was deemed unnecessary as it was practically non-toxic.

Appendix B

Laboratory analysis methods for pesticide or metabolite residues covered by the 2nd HKTDS

Multi-residue test methods for the analysis of different groups of pesticide or metabolite residues by liquid chromatography-tandem mass spectrometry (LC-MS/MS):

150 analytes of pesticide or metabolite residues (except highly polar pesticides)

2. Among them, 150 analytes of individual pesticide or metabolite residues were categorised into four groups based on their properties, including: (i) Group A: 2-(trifluoromethyl)benzoic acid, 6-chloronicotinic acid, imazamox, imazapic, 5-(trifluoromethyl)-1H-pyrazole-3-carboxylic acid (IN-E8S72), 4-(7-amino-5-ethyl[1,2,4]triazolo[1,5-a]pyrimidin-6-yl)butanoic acid or omega-hetarylbutanoic acid (M650F01), 6-(7-amino-5-ethyl[1,2,4]triazolo[1,5-a]pyrimidin-6-yl)hexanoic acid or omega-hetarylhexanoic acid (M650F06) and 2-[3-Methyl-4-[2-methyl-2-(3-methylthiophene-2-carboxamido)propanoyl]phenoxy] propanoic acid (PPA); (ii) Group B: N,N'-dimethylthiourea (DMTU), ethylene thiourea (ETU) and propylene thiourea (PTU); (iii) Group C: 3-hydroxycarbofuran, benfuracarb, carbofuran, carbosulfan, cycloxaprid, fenitrothion, fluensulfone, isofenphos methyl, parathion and parathion methyl; and (iv) Group D: rest of the 129 analytes.

3. For the analysis of Group A, the composite sample (20 g for water samples; 10 g for food samples) was extracted by shaking with acetonitrile containing formic acid. After the addition of the buffer-salt mixture as described in the extraction method of EN 15662, the whole mixture was shaken intensively and centrifuged for phase separation. For the analysis of Group B in water samples, 20 g of the composite

sample was diluted with methanol containing formic acid then proceeded to subsequent clean-up. For the analysis of Group B in food samples, as well as the analysis of Groups C and D, the composite sample (20 g for water samples; 10 g for food samples) was extracted by shaking with acetonitrile containing acetic acid. After the addition of magnesium sulphate ($MgSO_4$) and sodium acetate in accordance to the extraction method of AOAC Official Method 2007.01, the whole mixture was shaken intensively and centrifuged for phase separation.

4. The above extracts were then cleaned up by shaking with appropriate dispersive solid phase extraction materials, e.g. use of C18 sorbent alone for Group A and Group B (water samples); use of $MgSO_4$ and sorbents of primary secondary amines and C18 for Group B (food samples), and Groups C and D. The cleaned extracts were centrifuged, appropriately diluted with the initial mobile phase compositions adopted for each group, and filtered for subsequent LC-MS/MS analysis.

5. The analytes were separated by using Waters Acquity UPLC HSS T3 column (150 mm x 2.1 mm, 1.8 μm) under respective gradient elution conditions for each group. The analytical confirmation and quantification were performed by tandem mass spectrometry with use of ETU-d_4, PTU-d_6 and propamocarb-d_7 as internal standards (IS) for their respective native compounds, imidacloprid-d_4 as IS for both its native compound and imidaclothiz, while 4-bromo-3,5-dimethylphenyl-N-methyl carbamate, tributyl phosphate and endosulfan sulphate-$^{13}C_9$ as ISs for other compounds.

<u>11 analytes of highly polar pesticide or metabolite residues</u>

6. The 11 analytes of highly polar pesticide or metabolite residues include ethephon, fosetyl, phosphonic acid, glufosinate, 3-methyl-phosphinico-propionic acid (MPPA), N-acetyl-glufosinate, glyphosate, N-acetyl-glyphosate, aminomethyl-

phosphonic acid (AMPA), N-acetyl-AMPA and maleic hydrazide.

7. In order to avoid the possible interferences caused by degradation of ethephon, fosetyl and their respective isotopically labelled internal standards (IL-IS) to phosphonic acid, phosphonic acid was tested separately.

8. For the analysis of highly polar pesticides except phosphonic acid, 25 g of the composite water sample was diluted with 1% (v/v) formic acid in methanol then proceeded to LC-MS/MS analysis. While for their analyses in food samples, 2 g of the composite sample was added with water for water content adjustment, and then extracted by shaking with 1% (v/v) formic acid in methanol as described in the extraction method of EURL QuPPe method. The above extract was centrifuged and filtered upon ultrafiltration with use of 10 KDa Molecular Weight Cuttoff centrifugal filter. The clean extract was appropriately diluted with the initial mobile phase compositions, and filtered for subsequent LC-MS/MS analysis. Ethephon was separated by using Thermo Hypercarb Porous Graphitic Carbon column (100 mm x 2.1 mm, 5 μm) under gradient elution conditions with acetic acid-acidified mobile phases; and fosetyl, MPPA, N-acetyl-glufosinate, N-acetyl-AMPA, N-acetyl-glyphosate and maleic hydrazide were separated under similar conditions except with use of mobile phases acidified with formic acid. AMPA, glufosinate and glyphosate were separated by using Waters Anionic Polar Pesticide column (100 mm x 2.1 mm, 5 μm) under gradient elution conditions. Their analytical confirmation and quantification were performed by tandem mass spectrometry with use of IL-IS including ethephon-d_4, fosetyl-d_5, glufosinate-d_3, MPPA-d_3, N-acetyl-glufosinate-d_3, glyphosate-$^{13}C_2$,^{15}N, AMPA-^{13}C,^{15}N, and maleic hydrazide-d_2 for their respective native compounds; whereas N-acetyl-glyphosate-$^{13}C_2$,^{15}N as IS for both its native compound and N-acetyl-AMPA.

9. For the analysis of phosphonic acid in water samples, 8 g of the composite sample was diluted with 1% (v/v) formic acid in methanol then proceeded to LC-MS/MS analysis. Sample preparation procedures for the analysis of phosphonic acid in food samples were similar to those for other highly polar pesticides, except that 1% (v/v) formic acid in water was used for adjustment of water content. Phosphonic acid was separated by using Waters Anionic Polar Pesticide column (100 mm x 2.1 mm, 5 μm) under gradient elution conditions. The analytical confirmation and quantification were performed by tandem mass spectrometry with use of phosphonic acid-$^{18}O_3$ as IS.

Appendix C

List of pesticides with more than one analytes

	Analytes covered	Conversion factors	Remarks
Neonicotinoids (5 out of 11)			
Acetamiprid (ACE)	• Acetamiprid (ACE)	1	
	• Acetamiprid-N-desmethyl	1.067	Expressed as ACE; apply for animal commodities only
Dinotefuran (DIN)	• Dinotefuran (DIN)	1	
	• 1-methyl-3-(tertrahydro-3-furylmethyl) urea (UF)	1.278	Expressed as DIN
Flupyradifurone (FLU)	• Flupyradifurone (FLU)	1	
	• 6-chloronicotinic acid	1.832	Expressed as FLU; apply for plant commodities only
Imidacloprid (IMI)	• Imidacloprid (IMI)	1	
	• 6-chloronicotinic acid	1.623	Expressed as IMI
Thiamethoxam (THI)	• Thiamethoxam (THI)	1	
	• N-(2-chlorothiazol-5-ylmethyl)-N'-nitroguanidine (CGA 265307)	1.238	Expressed as THI; apply for poultry only
Organophosphorus pesticides (OPPs) (9 out of 45)			
Acephate	• Acephate	1	
	• Methamidophos	7.5	Expressed as acephate
Dimethoate	• Dimethoate	1	
	• Omethoate	2.5	Expressed as dimethoate
Disulfoton	• Disulfoton	1	
	• Disulfoton sulphone	0.896	Expressed as disultoton
	• Disulfoton sulphoxide	0.945	
	• Demeton-S	1.062	
	• Demeton-S sulphone	0.945	
	• Demeton-S sulphoxide	1	
Fenamiphos	• Fenamiphos	1	
	• Fenamiphos sulphone	0.905	Expressed as fenamiphos
	• Fenamiphos sulphoxide	0.945	
Fenthion	• Fenthion	1	
	• Fenthion sulphone	0.897	Expressed as fenthion
	• Fenthion sulphoxide	0.946	
	• Fenthion oxon	1.061	
	• Fenthion oxon sulphone	0.946	
	• Fenthion oxon sulphoxide	1	

	Analytes covered	Conversion factors	Remarks
Oxydemeton methyl	• Oxydemeton methyl	1	
	• Demeton-S-methyl	1.069	Expressed as oxydemeton methyl
	• Demeton-S-methylsulphone	0.939	
Parathion methyl	• Parathion methyl	1	
	• Para-oxon methyl	1.065	Expressed as parathion methyl
Phorate	• Phorate	1	
	• Phorate sulphone	0.891	Expressed as phorate
	• Phorate sulphoxide	0.942	
	• Phorate oxon	1.066	
	• Phorate oxon sulphone	0.942	
	• Phorate oxon sulphoxide	1	
Terbufos	• Terbufos	1	
	• Terbufos sulphone	0.9	Expressed as terbufos
	• Terbufos sulphoxide	0.947	
	• Terbufos oxon	1.059	
	• Terbufos oxon sulphone	0.947	
	• Terbufos oxon sulphoxide	1	
Carbamates (5 out of 16)			
Aldicarb	• Aldicarb	1	
	• Aldicarb sulphone	0.856	Expressed as aldicarb
	• Aldicarb sulphoxide	0.922	
Carbosulfan	• Carbosulfan	1	
	• Carbofuran	10	Expressed as carbosulfan
	• 3-hydroxycarbofuran	10	
Methiocarb	• Methiocarb	1	
	• Methiocarb sulphone	0.876	Expressed as methiocarb
	• Methiocarb sulphoxide	0.934	
Methomyl	• Methomyl	1	
	• Thiodicarb	0.915	Expressed as methomyl
Pirimicarb	• Pirimicarb	1	
	• Pirimicarb-desmethyl	1.063	Expressed as pirimicarb; apply for plant commodities only
	• Pirimicarb-desmethyl-formamido	0.945	

Analytes covered		Conversion factors	Remarks
Other pesticides (11 out of 26)			
Ametoctradin	• Ametoctradin	1	
	• 4-(7-amino-5-ethyl[1,2,4]triazolo[1,5-a]pyrimidin-6-yl)butanoic acid or omega-hetarylbutanoic acid (M650F01)	0.964	Expressed as ametoctradin; apply for animal commodities only
	• 6-(7-amino-5-ethyl[1,2,4]triazolo[1,5-a]pyrimidin-6-yl)hexanoic acid or omega-hetarylhexanoic acid (M650F06)	0.878	
Bixafen	• Bixafen	1	
	• Bixafen desmethyl	1.035	Expressed as bixafen
Cyazofamid	• Cyazofamid	1	
	• 4-chloro-5-p-tolylimidazole-2-carbonitrile (CCIM)	1.492	Expressed as cyazofamid
Cyflumetofen	• Cyflumetofen	1	
	• 2-(trifluoromethyl)benzoic acid	2.354	Expressed as cyflumetofen
Ethiprole	• Ethiprole	1	
	• Ethiprole sulfone	0.961	Expressed as ethiprole
Fipronil	• Fipronil	1	
	• Fipronil desulfinyl	1.123	Expressed as fipronil
	• Fipronil sulfone	0.965	
	• Fipronil thioether	1.038	
Fosetyl aluminium	• Fosetyl	0.743	Expressed as phosphonic acid, apply for plant commodities only
	• Phosphonic acid	1	
Glufosinate ammonium	• Glufosinate	1	
	• 3-methyl-phosphinico-propionic acid (MPPA)	1.191	Expressed as glufosinate
	• N-Acetyl-glufosinate	0.32	
Glyphosate	• Glyphosate		
	• Aminomethylphosphonic acid (AMPA)	1.523	Expressed as glyphosate
	• N-acetyl-AMPA	1.105	
	• N-acetyl-glyphosate	0.801	

	Analytes covered	Conversion factors	Remarks
Isofetamid	• Isofetamid	1	
	• 2-[3-methyl-4-[2-methyl-2-(3-methylthiophene-2-carboxamido)propanoyl]phenoxy] propanoic acid (PPA)	0.923	Expressed as isofetamid; apply for animal commodities only
Oxathiapiprolin	• Oxathiapiprolin	1	
	• 5-(trifluoromethyl)-1H-pyrazole-3-carboxylic acid (IN-E8S72)	2.996	Expressed as oxathiapiprolin

Appendix D

List of TDS food items with the detection of pesticide or metabolite residues in the 2nd HKTDS

Table D.1: Neonicotinoids (Neonics)

Among the 187 TDS food items, 103 TDS food items were detected with either one or more of the ten neonicotinoids (neonics) (including metabolites) as shown below:

TDS Food Item	No. pesticides detected	Pesticide detected									
		Acetamiprid (ACE)	Clothianidin (CLO)	Dinotefuran (DIN)	Flupyradifurone (FLU)	Imidacloprid (IMI)	Imidaclothiz (IMID)	Nitenpyram (NIT)	Sulfoxaflor (SUL)	Thiacloprid (THIA)	Thiamethoxam (THI)
Cereals and their products (7 detected out of 21 items)	**6**	Y	Y	Y	Y	Y					Y
Biscuit / Cookie	0										
Bread, plain	0										
Bread, raisin	3	Y	Y			Y					
Breakfast cereals	0										
Bun, with savoury filling, baked	0										
Bun, with savoury filling, steamed	4		Y	Y		Y					Y
Bun, with sweet filling, steamed	1										Y
Cake	2	Y			Y						
Corn	4		Y		Y	Y					Y
Corn starch	0										
Deep-fried dough, Chinese style	0										
Noodles, Chinese / Japanese style	0										
Noodles, instant	0										
Noodles, rice	0										
Oats / Oatmeal	0										
Pasta, Western style	0										
Pastries, Chinese style	0										
Pie / Tart	0										
Pineapple bun	0										
Rice, unpolished	2		Y			Y					
Rice, white	1	Y									
Vegetables and their products (39 detected out of 42 items)	**9**	Y	Y	Y	Y	Y		Y	Y	Y	Y
Bamboo fungus	4	Y	Y			Y					Y
Bamboo shoot	0										
Beet root	4		Y		Y	Y					Y
Bitter melon	5	Y	Y	Y		Y					Y
Blanching chives	4		Y	Y		Y					Y
Broccoli / Cauliflower	6	Y	Y		Y	Y		Y			Y
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	4	Y	Y			Y					Y
Cabbage, Chinese flowering	6	Y	Y	Y	Y	Y					Y

TDS Food Item	No. pesticides detected	Pesticide detected									
		Acetamiprid (ACE)	Clothianidin (CLO)	Dinotefuran (DIN)	Flupyradifurone (FLU)	Imidacloprid (IMI)	Imidaclothiz (IMID)	Nitenpyram (NIT)	Sulfoxaflor (SUL)	Thiacloprid (THIA)	Thiamethoxam (THI)
Cabbage, European variety	6		Y	Y	Y	Y		Y			Y
Cabbage, Pak-choi Chinese	5	Y	Y	Y		Y					Y
Cabbage, Pak-choi Chinese, dried	4	Y	Y			Y					Y
Carrot / Radish	5	Y	Y	Y		Y					Y
Celery	5	Y		Y		Y			Y		Y
Chinese amaranth (Chinese spinach)	5	Y	Y	Y		Y					Y
Chinese kale	6	Y	Y	Y	Y	Y					Y
Cucumber	8	Y	Y	Y	Y	Y		Y	Y		Y
Ear fungus	1		Y								
Eggplant	6	Y	Y	Y	Y	Y					Y
Garlic	2		Y								Y
Ginger	4		Y		Y	Y					Y
Hairy gourd / wax gourd	7	Y	Y	Y	Y	Y			Y		Y
Leaf mustard	6	Y	Y	Y	Y	Y					Y
Lettuce, Chinese / European / Indian	5	Y	Y	Y		Y					Y
Mung bean sprout	0										
Mushroom, button	1		Y								
Mushroom, shiitake, dried	0										
Onion	4		Y		Y	Y					Y
Pea shoots	6	Y	Y	Y	Y	Y					Y
Peppers (sweet pepper / chili pepper)	6	Y	Y	Y		Y		Y			Y
Potato	5	Y	Y	Y		Y					Y
Potato, fried	3		Y			Y					Y
Preserved vegetables	7	Y	Y	Y	Y	Y				Y	Y
Pumpkin	5	Y	Y	Y		Y					Y
Seaweed	2		Y								Y
Spinach	4	Y	Y			Y					Y
Sponge gourd	6		Y	Y	Y	Y		Y			Y
Spring onion	6	Y	Y	Y	Y	Y					Y
Sweet potato	3		Y		Y	Y					
Tomato	7	Y	Y	Y	Y	Y		Y			Y
Water spinach	5	Y	Y		Y	Y					Y
Watercress	5		Y	Y		Y		Y			Y
Zucchini	5	Y	Y	Y		Y					Y
Legumes, nuts and seeds and their products (4 detected out of 9 items)	**6**	Y	Y	Y	Y	Y					Y
Fermented soybean products	2				Y	Y					
Green peas	1										Y
Green string beans (with pod)	6	Y	Y	Y	Y	Y					Y
Peanut	5	Y	Y	Y		Y					Y
Peanut butter	0										
Red bean	0										
Soybean curd (Tofu)	0										
Tree nuts	0										
Vermicelli, mung bean	0										

TDS Food Item	No. pesticides detected	Pesticide detected									
		Acetamiprid (ACE)	Clothianidin (CLO)	Dinotefuran (DIN)	Flupyradifurone (FLU)	Imidacloprid (IMI)	Imidaclothiz (IMID)	Nitenpyram (NIT)	Sulfoxaflor (SUL)	Thiacloprid (THIA)	Thiamethoxam (THI)
Fruits (16 detected out of 18 items)	**10**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Apple	4	Y	Y						Y	Y	
Banana	3		Y			Y					Y
Cherry	4	Y			Y	Y				Y	
Dragon fruit	5	Y	Y		Y	Y					Y
Dried fruits	3	Y				Y					Y
Durian	5	Y		Y	Y	Y					Y
Grapes	6		Y	Y	Y	Y			Y		Y
Kiwi	0										
Longan / Lychee	4	Y	Y			Y					Y
Mandarin / Tangerine	7	Y	Y	Y	Y	Y			Y		Y
Mango	5	Y	Y		Y	Y			Y		
Melon	3	Y	Y								Y
Orange	5	Y	Y		Y	Y					Y
Papaya	7	Y	Y	Y	Y	Y	Y				Y
Peach	6	Y	Y	Y		Y			Y		Y
Pear	8	Y	Y	Y	Y	Y			Y	Y	Y
Pineapple	0										
Watermelon	8	Y	Y	Y	Y	Y		Y		Y	Y
Meat, poultry and game and their products (5 detected out of 17 items)	**2**		Y	Y							
Beef	0										
Beef tendon	0										
Chicken meat, other than chicken wing	0										
Chicken wing	0										
Duck / goose, roasted	1		Y								
Ham, pork	0										
Liver, goose	1			Y							
Liver, pig	0										
Luncheon meat	0										
Meat ball	0										
Meat sausage	0										
Mutton	0										
Pork chop	0										
Pork ribs	1			Y							
Pork, barbequed	1			Y							
Pork, other than pork chop and pork ribs	1			Y							
Pork, roasted	0										
Egg and their products (0 detected out of 3 items)	**0**										
Egg, chicken	0										
Egg, lime preserved	0										
Egg, salted	0										

TDS Food Item	No. pesticides detected	Pesticide detected									
		Acetamiprid (ACE)	Clothianidin (CLO)	Dinotefuran (DIN)	Flupyradifurone (FLU)	Imidacloprid (IMI)	Imidaclothiz (IMID)	Nitenpyram (NIT)	Sulfoxaflor (SUL)	Thiacloprid (THIA)	Thiamethoxam (THI)
Fish, seafood and their products (2 detected out of 24 items)	**3**	Y				Y					Y
Clam	0										
Crab	1	Y									
Cuttlefish	0										
Fish ball / fish cake	0										
Fish fillet	0										
Fish, Dace, minced	2					Y					Y
Fish, Golden thread	0										
Fish, Grass carp	0										
Fish, Grouper	0										
Fish, Mandarin fish	0										
Fish, Mangrove red snapper	0										
Fish, Pomfret / Pompano	0										
Fish, Salmon	0										
Fish, Tuna	0										
Fish, Yellow croaker	0										
Lobster	0										
Mantis shrimp	0										
Mussel	0										
Oyster	0										
Salted fish	0										
Scallop	0										
Shrimp / Prawn	0										
Shrimp / Prawn, dried	0										
Squid	0										
Dairy products (3 detected out of 8 items)	**4**	Y	Y		Y	Y					
Cheese	0										
Fermented / Cultured beverages, dairy based	1				Y						
Ice-cream	2	Y				Y					
Milk beverages	0										
Milk, condensed / evaporated	0										
Milk, skim	0										
Milk, whole	0										
Yoghurt	1		Y								
Fats and oils (0 detected out of 2 items)	**0**										
Butter	0										
Vegetable oil	0										
Beverages, alcoholic (1 detected out of 2 items)	**5**	Y	Y			Y			Y		Y
Beer	0										
Wine, red / white	5	Y	Y			Y			Y		Y
Beverages, non-alcoholic (5 detected out of 12 items)	**6**	Y	Y	Y		Y				Y	Y
Carbonated drink (including diet version)	0										
Coconut water	0										
Coffee	0										

TDS Food Item	No. pesticides detected	Pesticide detected									
		Acetamiprid (ACE)	Clothianidin (CLO)	Dinotefuran (DIN)	Flupyradifurone (FLU)	Imidacloprid (IMI)	Imidaclothiz (IMID)	Nitenpyram (NIT)	Sulfoxaflor (SUL)	Thiacloprid (THIA)	Thiamethoxam (THI)
Fruit and / or vegetable juice	6	Y	Y	Y		Y				Y	Y
Malt drink	0										
Soybean drink	0										
Tea (including lemon tea)	5	Y		Y		Y				Y	Y
Tea, chrysanthemum	4	Y	Y			Y					Y
Tea, with milk	4	Y		Y		Y					Y
Tea, with milk and tapioca pearls	4	Y		Y		Y					Y
Water, bottled, distilled / purified	0										
Water, drinking	0										
Mixed dishes (10 detected out of 12 items)	**7**	Y	Y	Y		Y		Y	Y		Y
Dim sum, beef ball, steamed	4		Y	Y		Y					Y
Dim sum, Siu Mai, steamed	0										
Dumpling / spring roll, fried	5		Y	Y		Y			Y		Y
Dumpling, boiled (including wonton)	4		Y	Y		Y					Y
Dumpling, steamed	4		Y	Y		Y					Y
Glutinous rice dumpling	3		Y	Y							Y
Hamburger	5	Y	Y	Y		Y					Y
Pizza	6	Y	Y	Y		Y		Y			Y
Rice-roll, plain, steamed	0										
Soup, Chinese style	3	Y	Y								Y
Soup, Western style	3		Y			Y					Y
Turnip cake	5	Y	Y	Y		Y					Y
Snack foods (1 detected out of 1 item)	**3**		Y			Y					Y
Potato chips	3		Y			Y					Y
Sugars and confectionery (3 detected out of 5 items)	**3**	Y			Y	Y					
Chocolate	1					Y					
Honey	1	Y									
Jam	3	Y			Y	Y					
Sugar, brown / rock	0										
Sugar, white, granulated	0										
Condiments, sauces and herbs (7 detected out of 11 items)	**7**	Y	Y	Y	Y	Y	Y				Y
Chicken powder / cube	1		Y								
Chinese parsley	6	Y	Y	Y		Y	Y				Y
Curry sauce	6	Y	Y	Y	Y	Y					Y
Oyster sauce	0										
Salad dressing	0										
Sesame seed oil	1					Y					
Soy sauce	2				Y	Y					
Table salt	0										
Tomato paste / ketchup	5	Y	Y		Y	Y					Y
Vinegar	0										
White pepper	4	Y	Y			Y					Y
No. of TDS food items detected		**63**	**78**	**52**	**37**	**81**	**2**	**9**	**11**	**7**	**77**

Table D.2: Organophosphorus pesticides (OPPs)

Among the 187 TDS food items, 91 TDS food items were detected with either one or more of the 21 organophosphorus pesticides (including metabolites) as shown below:

TDS Food Item	No. pesticides detected	Pesticides detected																			
		Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
Cereals and their products (14 detected out of 21 items)	**7**		**Y**	**Y**		**Y**								**Y**			**Y**	**Y**	**Y**			
Biscuit / Cookie	4			Y													Y	Y	Y			
Bread, plain	0																					
Bread, raisin	2					Y												Y				
Breakfast cereals	1																		Y			
Bun, with savoury filling, baked	2																	Y	Y			
Bun, with savoury filling, steamed	2		Y																Y			
Bun, with sweet filling, steamed	1																		Y			
Cake	1													Y								
Corn	0																					
Corn starch	0																					
Deep-fried dough, Chinese style	1																	Y				
Noodles, Chinese / Japanese style	3		Y															Y	Y			
Noodles, instant	1																		Y			
Noodles, rice	0																					
Oats / Oatmeal	2													Y					Y			
Pasta, Western style	2			Y															Y			
Pastries, Chinese style	3		Y														Y		Y			
Pie / Tart	2																Y		Y			
Pineapple bun	0																					
Rice, unpolished	0																					
Rice, white	0																					

TDS Food Item	No. pesticides detected	Pesticides detected																			
		Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
Vegetables and their products (26 detected out of 42 items)	**11**	**Y**	**Y**		**Y**	**Y**	**Y**	**Y**			**Y**	**Y**	**Y**					**Y**		**Y**		
Bamboo fungus	2		Y															Y				
Bamboo shoot	1		Y																			
Beet root	2		Y									Y										
Bitter melon	3						Y					Y								Y		
Blanching chives	2		Y																	Y		
Broccoli / Cauliflower	1		Y																			
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	0																					
Cabbage, Chinese flowering	0																					
Cabbage, European variety	0																					
Cabbage, Pak-choi Chinese	0																					
Cabbage, Pak-choi Chinese, dried	3		Y		Y			Y														
Carrot / Radish	0																					
Celery	0																					
Chinese amaranth (Chinese spinach)	1											Y										
Chinese kale	3		Y															Y		Y		
Cucumber	1					Y																
Ear fungus	1		Y																			
Eggplant	0																					
Garlic	0																					
Ginger	1											Y										
Hairy gourd / wax gourd	1											Y										
Leaf mustard	2	Y					Y															
Lettuce, Chinese / European / Indian	2		Y									Y										
Mung bean sprout	0																					
Mushroom, button	0																					
Mushroom, shiitake, dried	0																					

TDS Food Item	No. pesticides detected	Pesticides detected																			
		Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
Onion	1						Y															
Pea shoots	0																					
Peppers (sweet pepper / chili pepper)	6		Y		Y		Y				Y	Y								Y		
Potato	1											Y										
Potato, fried	0																					
Preserved vegetables	2		Y																	Y		
Pumpkin	1		Y																			
Seaweed	0																					
Spinach	1		Y																			
Sponge gourd	2		Y									Y										
Spring onion	3		Y				Y						Y									
Sweet potato	0																					
Tomato	0																					
Water spinach	1						Y															
Watercress	2		Y																	Y		
Zucchini	1											Y										
Legumes, nuts and seeds and their products (5 detected out of 9 items)	**6**	**Y**	**Y**								**Y**	**Y**							**Y**	**Y**		
Fermented soybean products	0																					
Green peas	0																					
Green string beans (with pod)	4	Y									Y	Y								Y		
Peanut	1		Y																			
Peanut butter	1		Y																			
Red bean	1		Y																			
Soybean curd (Tofu)	0																					
Tree nuts	1																		Y			
Vermicelli, mung bean	0																					

TDS Food Item	No. pesticides detected	Pesticides detected																			
		Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
Fruits (9 detected out of 18 items)	**9**	**Y**	**Y**				**Y**			**Y**		**Y**		**Y**	**Y**		**Y**	**Y**				
Apple	0																					
Banana	0																					
Cherry	0																					
Dragon fruit	0																					
Dried fruits	0																					
Durian	1																	Y				
Grapes	1		Y																			
Kiwi	0																					
Longan / Lychee	1																	Y				
Mandarin / Tangerine	3						Y			Y				Y								
Mango	3	Y	Y												Y							
Melon	1											Y										
Orange	1													Y								
Papaya	1						Y															
Peach	0																					
Pear	2		Y														Y					
Pineapple	0																					
Watermelon	0																					
Meat, poultry and game and their products (7 detected out of 17 items)	**6**				**Y**				**Y**		**Y**						**Y**	**Y**	**Y**			
Beef	1				Y																	
Beef tendon	0																					
Chicken meat, other than chicken wing	0																					
Chicken wing	0																					
Duck / goose, roasted	0																					
Ham, pork	0																					
Liver, goose	0																					

TDS Food Item	No. pesticides detected	Pesticides detected																			
		Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
Liver, pig	2								Y		Y											
Luncheon meat	0																					
Meat ball	1																	Y				
Meat sausage	0																					
Mutton	1				Y																	
Pork chop	1																		Y			
Pork ribs	0																					
Pork, barbequed	1																Y					
Pork, other than pork chop and pork ribs	0																					
Pork, roasted	1																Y					
Egg and their products (0 detected out of 3 items)	**0**																					
Egg, chicken	0																					
Egg, lime preserved	0																					
Egg, salted	0																					
Fish, seafood and their products (9 detected out of 24 items)	**6**		**Y**						**Y**								**Y**	**Y**			**Y**	**Y**
Clam	2		Y																		Y	
Crab	1								Y													
Cuttlefish	0																					
Fish ball / fish cake	1																	Y				
Fish fillet	0																					
Fish, Dace, minced	4		Y														Y	Y				Y
Fish, Golden thread	0																					
Fish, Grass carp	2		Y															Y				
Fish, Grouper	0																					
Fish, Mandarin fish	2		Y															Y				
Fish, Mangrove red snapper	0																					
Fish, Pomfret / Pompano	1		Y																			
Fish, Salmon	0																					

TDS Food Item	No. pesticides detected	Pesticides detected																			
		Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
Fish, Tuna	0																					
Fish, Yellow croaker	1																				Y	
Lobster	0																					
Mantis shrimp	0																					
Mussel	0																					
Oyster	0																					
Salted fish	2								Y													Y
Scallop	0																					
Shrimp / Prawn	0																					
Shrimp / Prawn, dried	0																					
Squid	0																					
Dairy products (0 detected out of 8 items)	**0**																					
Cheese	0																					
Fermented / Cultured beverages, dairy based	0																					
Ice-cream	0																					
Milk beverages	0																					
Milk, condensed / evaporated	0																					
Milk, skim	0																					
Milk, whole	0																					
Yoghurt	0																					
Fats and oils (1 detected out of 2 items)	**2**		**Y**											**Y**								
Butter	0																					
Vegetable oil	2		Y											Y								
Beverages, alcoholic (0 detected out of 2 items)	**0**																					
Beer	0																					
Wine, red / white	0																					

TDS Food Item	No. pesticides detected	Pesticides detected																			
		Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
Beverages, non-alcoholic (4 detected out of 12 items)	**4**		**Y**			**Y**								**Y**			**Y**					
Carbonated drink (including diet version)	0																					
Coconut water	0																					
Coffee	1					Y																
Fruit and / or vegetable juice	2		Y											Y								
Malt drink	1		Y																			
Soybean drink	0																					
Tea (including lemon tea)	0																					
Tea, chrysanthemum	1																Y					
Tea, with milk	0																					
Tea, with milk and tapioca pearls	0																					
Water, bottled, distilled / purified	0																					
Water, drinking	0																					
Mixed dishes (10 detected out of 12 items)	**11**		**Y**	**Y**	**Y**	**Y**	**Y**				**Y**		**Y**				**Y**	**Y**	**Y**	**Y**		
Dim sum, beef ball, steamed	4		Y				Y						Y						Y			
Dim sum, Siu Mai, steamed	1																	Y				
Dumpling / spring roll, fried	3		Y															Y	Y			
Dumpling, boiled (including wonton)	2																	Y	Y			
Dumpling, steamed	3		Y															Y	Y			
Glutinous rice dumpling	2		Y														Y					
Hamburger	3				Y													Y	Y			
Pizza	5		Y	Y							Y								Y	Y		
Rice-roll, plain, steamed	1					Y																
Soup, Chinese style	0																					
Soup, Western style	0																					
Turnip cake	1																Y					
Snack foods (1 detected out of 1 item)	**1**		**Y**																			
Potato chips	1		Y																			

TDS Food Item	No. pesticides detected	Pesticides detected																					
		Acephate	Chlorpyrifos	Chlorpyrifos methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Edifenphos	Ethion	Fenthion	Fosthiazate	Isocarbophos	Malathion	Methamidophos	Methidathion	Phorate	Phoxim	Pirimiphos methyl	Profenofos	Triazophos	Trichlorfon
Sugars and confectionery (2 detected out of 5 items)	**4**		**Y**				**Y**							**Y**					**Y**			
Chocolate	2		Y																Y			
Honey	0																					
Jam	2						Y							Y								
Sugar, brown / rock	0																					
Sugar, white, granulated	0																					
Condiments, sauces and herbs (3 detected out of 11 items)	**13**	**Y**	**Y**							**Y**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	
Chicken powder / cube	0																					
Chinese parsley	9	Y	Y									Y	Y	Y	Y			Y		Y	Y	
Curry sauce	7		Y							Y						Y	Y		Y	Y	Y	
Oyster sauce	0																					
Salad dressing	0																					
Sesame seed oil	2		Y															Y				
Soy sauce	0																					
Table salt	0																					
Tomato paste / ketchup	0																					
Vinegar	0																					
White pepper	0																					
No. of TDS food items detected		**4**	**43**	**3**	**5**	**4**	**10**	**1**	**3**	**2**	**4**	**13**	**3**	**8**	**2**	**1**	**11**	**21**	**21**	**10**	**4**	**2**

Table D.3: Carbamates

Among the 187 TDS food items, 63 TDS food items were detected with either one or more of the eight carbamates (including metabolites) as shown below:

TDS Food Item	No. pesticides detected	Pesticides detected							
		Carbaryl	Carbosulfan	Fenobucarb (BPMC)	Isoprocarb	Methomyl	Oxamyl	Pirimicarb	Propamocarb
Cereals and their products (3 detected out of 21 items)	**3**	**Y**		**Y**					**Y**
Biscuit / Cookie	0								
Bread, plain	0								
Bread, raisin	1								Y
Breakfast cereals	0								
Bun, with savoury filling, baked	0								
Bun, with savoury filling, steamed	2			Y					Y
Bun, with sweet filling, steamed	0								
Cake	0								
Corn	0								
Corn starch	0								
Deep-fried dough, Chinese style	0								
Noodles, Chinese / Japanese style	0								
Noodles, instant	0								
Noodles, rice	0								
Oats / Oatmeal	0								
Pasta, Western style	0								
Pastries, Chinese style	0								
Pie / Tart	0								
Pineapple bun	0								
Rice, unpolished	1	Y							
Rice, white	0								
Vegetables and their products (31 detected out of 42 items)	**6**		**Y**	**Y**	**Y**	**Y**	**Y**		**Y**
Bamboo fungus	0								
Bamboo shoot	0								
Beet root	1								Y
Bitter melon	1								Y
Blanching chives	1								Y
Broccoli / Cauliflower	1								Y
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	2					Y			Y
Cabbage, Chinese flowering	1								Y
Cabbage, European variety	0								
Cabbage, Pak-choi Chinese	1								Y
Cabbage, Pak-choi Chinese, dried	0								
Carrot / Radish	0								
Celery	0								
Chinese amaranth (Chinese spinach)	1								Y
Chinese kale	1								Y

TDS Food Item	No. pesticides detected	Pesticides detected							
		Carbaryl	Carbosulfan	Fenobucarb (BPMC)	Isoprocarb	Methomyl	Oxamyl	Pirimicarb	Propamocarb
Cucumber	1								Y
Ear fungus	0								
Eggplant	1								Y
Garlic	1								Y
Ginger	0								
Hairy gourd / wax gourd	1								Y
Leaf mustard	1								Y
Lettuce, Chinese / European / Indian	2						Y		Y
Mung bean sprout	0								
Mushroom, button	1								Y
Mushroom, shiitake, dried	0								
Onion	1								Y
Pea shoots	1								Y
Peppers (sweet pepper / chili pepper)	3		Y		Y				Y
Potato	1								Y
Potato, fried	1								Y
Preserved vegetables	2				Y				Y
Pumpkin	1								Y
Seaweed	0								
Spinach	1								Y
Sponge gourd	2					Y			Y
Spring onion	1								Y
Sweet potato	1								Y
Tomato	1								Y
Water spinach	1								Y
Watercress	1			Y					
Zucchini	1								Y
Legumes, nuts and seeds and their products (2 detected out of 9 items)	**3**		**Y**	**Y**					**Y**
Fermented soybean products	0								
Green peas	0								
Green string beans (with pod)	3		Y	Y					Y
Peanut	0								
Peanut butter	0								
Red bean	1								Y
Soybean curd (Tofu)	0								
Tree nuts	0								
Vermicelli, mung bean	0								
Fruits (7 detected out of 18 items)	**2**					**Y**			**Y**
Apple	1					Y			
Banana	0								
Cherry	0								
Dragon fruit	0								
Dried fruits	0								
Durian	0								
Grapes	1								Y

TDS Food Item	No. pesticides detected	Pesticides detected							
		Carbaryl	Carbosulfan	Fenobucarb (BPMC)	Isoprocarb	Methomyl	Oxamyl	Pirimicarb	Propamocarb
Kiwi	0								
Longan / Lychee	1					Y			
Mandarin / Tangerine	0								
Mango	1								Y
Melon	1					Y			
Orange	0								
Papaya	1								Y
Peach	1					Y			
Pear	0								
Pineapple	0								
Watermelon	0								
Meat, poultry and game and their products (0 detected out of 17 items)	**0**								
Beef	0								
Beef tendon	0								
Chicken meat, other than chicken wing	0								
Chicken wing	0								
Duck / goose, roasted	0								
Ham, pork	0								
Liver, goose	0								
Liver, pig	0								
Luncheon meat	0								
Meat ball	0								
Meat sausage	0								
Mutton	0								
Pork chop	0								
Pork ribs	0								
Pork, barbequed	0								
Pork, other than pork chop and pork ribs	0								
Pork, roasted	0								
Egg and their products (0 detected out of 3 items)	**0**								
Egg, chicken	0								
Egg, lime preserved	0								
Egg, salted	0								
Fish, seafood and their products (0 detected out of 24 items)	**0**								
Clam	0								
Crab	0								
Cuttlefish	0								
Fish ball / fish cake	0								
Fish fillet	0								
Fish, Dace, minced	0								
Fish, Golden thread	0								
Fish, Grass carp	0								
Fish, Grouper	0								
Fish, Mandarin fish	0								

TDS Food Item	No. pesticides detected	Pesticides detected							
		Carbaryl	Carbosulfan	Fenobucarb (BPMC)	Isoprocarb	Methomyl	Oxamyl	Pirimicarb	Propamocarb
Fish, Mangrove red snapper	0								
Fish, Pomfret / Pompano	0								
Fish, Salmon	0								
Fish, Tuna	0								
Fish, Yellow croaker	0								
Lobster	0								
Mantis shrimp	0								
Mussel	0								
Oyster	0								
Salted fish	0								
Scallop	0								
Shrimp / Prawn	0								
Shrimp / Prawn, dried	0								
Squid	0								
Dairy products (0 detected out of 8 items)	**0**								
Cheese	0								
Fermented / Cultured beverages, dairy based	0								
Ice-cream	0								
Milk beverages	0								
Milk, condensed / evaporated	0								
Milk, skim	0								
Milk, whole	0								
Yoghurt	0								
Fats and oils (1 detected out of 2 items)	**1**	**Y**							
Butter	0								
Vegetable oil	1	Y							
Beverages, alcoholic (0 detected out of 2 items)	**0**								
Beer	0								
Wine, red / white	0								
Beverages, non-alcoholic (2 detected out of 12 items)	**2**					**Y**			**Y**
Carbonated drink (including diet version)	0								
Coconut water	0								
Coffee	0								
Fruit and / or vegetable juice	1					Y			
Malt drink	0								
Soybean drink	0								
Tea (including lemon tea)	0								
Tea, chrysanthemum	1								Y
Tea, with milk	0								
Tea, with milk and tapioca pearls	0								
Water, bottled, distilled / purified	0								
Water, drinking	0								
Mixed dishes (10 detected out of 12 items)	**4**			**Y**	**Y**		**Y**		**Y**
Dim sum, beef ball, steamed	3			Y	Y				Y
Dim sum, Siu Mai, steamed	1								Y
Dumpling / spring roll, fried	1								Y

TDS Food Item	No. pesticides detected	Pesticides detected							
		Carbaryl	Carbosulfan	Fenobucarb (BPMC)	Isoprocarb	Methomyl	Oxamyl	Pirimicarb	Propamocarb
Dumpling, boiled (including wonton)	1								Y
Dumpling, steamed	1								Y
Glutinous rice dumpling	0								
Hamburger	1								Y
Pizza	2						Y		Y
Rice-roll, plain, steamed	0								
Soup, Chinese style	1								Y
Soup, Western style	1								Y
Turnip cake	1								Y
Snack foods (1 detected out of 1 item)	**1**								**Y**
Potato chips	1								Y
Sugars and confectionery (1 detected out of 5 items)	**2**							**Y**	**Y**
Chocolate	0								
Honey	0								
Jam	2							Y	Y
Sugar, brown / rock	0								
Sugar, white, granulated	0								
Condiments, sauces and herbs (5 detected out of 11 items)	**5**	**Y**	**Y**	**Y**	**Y**				**Y**
Chicken powder / cube	0								
Chinese parsley	2			Y					Y
Curry sauce	4	Y	Y	Y					Y
Oyster sauce	0								
Salad dressing	1								Y
Sesame seed oil	0								
Soy sauce	0								
Table salt	0								
Tomato paste / ketchup	1								Y
Vinegar	0								
White pepper	4	Y		Y	Y				Y
No. of TDS food items detected		**4**	**3**	**7**	**4**	**7**	**2**	**1**	**55**

Table D.4: Dithiocarbamate (DTC) metabolites

Among the 187 TDS food items, 27 TDS food items were detected with either one or more of the three dithiocarbamate (DTC) metabolites as shown below:

TDS Food Item	No. pesticides detected	Pesticides detected		
		N,N'-Dimethylthiourea (DMTU)	Ethylene thiourea (ETU)	Propylene thiourea (PTU)
Cereals and their products (0 detected out of 21 items)	**0**			
Biscuit / Cookie	0			
Bread, plain	0			
Bread, raisin	0			
Breakfast cereals	0			
Bun, with savoury filling, baked	0			
Bun, with savoury filling, steamed	0			
Bun, with sweet filling, steamed	0			
Cake	0			
Corn	0			
Corn starch	0			
Deep-fried dough, Chinese style	0			
Noodles, Chinese / Japanese style	0			
Noodles, instant	0			
Noodles, rice	0			
Oats / Oatmeal	0			
Pasta, Western style	0			
Pastries, Chinese style	0			
Pie / Tart	0			
Pineapple bun	0			
Rice, unpolished	0			
Rice, white	0			
Vegetables and their products (15 detected out of 42 items)	**2**		**Y**	**Y**
Bamboo fungus	0			
Bamboo shoot	0			
Beet root	0			
Bitter melon	1		Y	
Blanching chives	0			
Broccoli / Cauliflower	0			
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	0			
Cabbage, Chinese flowering	0			
Cabbage, European variety	0			
Cabbage, Pak-choi Chinese	0			
Cabbage, Pak-choi Chinese, dried	0			

TDS Food Item	No. pesticides detected	Pesticides detected		
		N,N'-Dimethylthiourea (DMTU)	Ethylene thiourea (ETU)	Propylene thiourea (PTU)
Carrot / Radish	0			
Celery	1		Y	
Chinese amaranth (Chinese spinach)	1		Y	
Chinese kale	1		Y	
Cucumber	1			Y
Ear fungus	0			
Eggplant	0			
Garlic	0			
Ginger	0			
Hairy gourd / wax gourd	0			
Leaf mustard	1		Y	
Lettuce, Chinese / European / Indian	1			Y
Mung bean sprout	0			
Mushroom, button	0			
Mushroom, shiitake, dried	1		Y	
Onion	0			
Pea shoots	1		Y	
Peppers (sweet pepper / chili pepper)	0			
Potato	1		Y	
Potato, fried	1		Y	
Preserved vegetables	0			
Pumpkin	1		Y	
Seaweed	0			
Spinach	1		Y	
Sponge gourd	0			
Spring onion	1		Y	
Sweet potato	0			
Tomato	0			
Water spinach	0			
Watercress	1		Y	
Zucchini	0			
Legumes, nuts and seeds and their products (1 detected out of 9 items)	**1**		**Y**	
Fermented soybean products	0			
Green peas	0			
Green string beans (with pod)	1		Y	
Peanut	0			
Peanut butter	0			
Red bean	0			
Soybean curd (Tofu)	0			

TDS Food Item	No. pesticides detected	Pesticides detected		
		N,N'-Dimethylthiourea (DMTU)	Ethylene thiourea (ETU)	Propylene thiourea (PTU)
Tree nuts	0			
Vermicelli, mung bean	0			
Fruits (3 detected out of 18 items)	**2**		**Y**	**Y**
Apple	0			
Banana	0			
Cherry	0			
Dragon fruit	0			
Dried fruits	0			
Durian	0			
Grapes	0			
Kiwi	0			
Longan / Lychee	0			
Mandarin / Tangerine	1			Y
Mango	0			
Melon	0			
Orange	0			
Papaya	2		Y	Y
Peach	0			
Pear	1			Y
Pineapple	0			
Watermelon	0			
Meat, poultry and game and their products (0 detected out of 17 items)	**0**			
Beef	0			
Beef tendon	0			
Chicken meat, other than chicken wing	0			
Chicken wing	0			
Duck / goose, roasted	0			
Ham, pork	0			
Liver, goose	0			
Liver, pig	0			
Luncheon meat	0			
Meat ball	0			
Meat sausage	0			
Mutton	0			
Pork chop	0			
Pork ribs	0			
Pork, barbequed	0			
Pork, other than pork chop and pork ribs	0			
Pork, roasted	0			

TDS Food Item	No. pesticides detected	Pesticides detected		
		N,N'-Dimethylthiourea (DMTU)	Ethylene thiourea (ETU)	Propylene thiourea (PTU)
Egg and their products (0 detected out of 3 items)	**0**			
Egg, chicken	0			
Egg, lime preserved	0			
Egg, salted	0			
Fish, seafood and their products (2 detected out of 24 items)	**1**	**Y**		
Clam	0			
Crab	0			
Cuttlefish	0			
Fish ball / fish cake	0			
Fish fillet	0			
Fish, Dace, minced	0			
Fish, Golden thread	0			
Fish, Grass carp	0			
Fish, Grouper	0			
Fish, Mandarin fish	0			
Fish, Mangrove red snapper	0			
Fish, Pomfret / Pompano	0			
Fish, Salmon	0			
Fish, Tuna	0			
Fish, Yellow croaker	0			
Lobster	0			
Mantis shrimp	0			
Mussel	0			
Oyster	0			
Salted fish	0			
Scallop	1	Y		
Shrimp / Prawn	0			
Shrimp / Prawn, dried	1	Y		
Squid	0			
Dairy products (0 detected out of 8 items)	**0**			
Cheese	0			
Fermented / Cultured beverages, dairy based	0			
Ice-cream	0			
Milk beverages	0			
Milk, condensed / evaporated	0			
Milk, skim	0			
Milk, whole	0			
Yoghurt	0			

TDS Food Item	No. pesticides detected	Pesticides detected		
		N,N'-Dimethylthiourea (DMTU)	Ethylene thiourea (ETU)	Propylene thiourea (PTU)
Fats and oils (0 detected out of 2 items)	**0**			
Butter	0			
Vegetable oil	0			
Beverages, alcoholic (0 detected out of 2 items)	**0**			
Beer	0			
Wine, red / white	0			
Beverages, non-alcoholic (0 detected out of 12 items)	**0**			
Carbonated drink (including diet version)	0			
Coconut water	0			
Coffee	0			
Fruit and / or vegetable juice	0			
Malt drink	0			
Soybean drink	0			
Tea (including lemon tea)	0			
Tea, chrysanthemum	0			
Tea, with milk	0			
Tea, with milk and tapioca pearls	0			
Water, bottled, distilled / purified	0			
Water, drinking	0			
Mixed dishes (3 detected out of 12 items)	**1**		**Y**	
Dim sum, beef ball, steamed	1		Y	
Dim sum, Siu Mai, steamed	1		Y	
Dumpling / spring roll, fried	1		Y	
Dumpling, boiled (including wonton)	0			
Dumpling, steamed	0			
Glutinous rice dumpling	0			
Hamburger	0			
Pizza	0			
Rice-roll, plain, steamed	0			
Soup, Chinese style	0			
Soup, Western style	0			
Turnip cake	0			
Snack foods (1 detected out of 1 item)	**1**		**Y**	
Potato chips	1		Y	

TDS Food Item	No. pesticides detected	Pesticides detected		
		N,N'-Dimethylthiourea (DMTU)	Ethylene thiourea (ETU)	Propylene thiourea (PTU)
Sugars and confectionery (0 detected out of 5 items)	**0**			
Chocolate	0			
Honey	0			
Jam	0			
Sugar, brown / rock	0			
Sugar, white, granulated	0			
Condiments, sauces and herbs (2 detected out of 11 items)	**1**		**Y**	
Chicken powder / cube	0			
Chinese parsley	0			
Curry sauce	1		Y	
Oyster sauce	0			
Salad dressing	0			
Sesame seed oil	0			
Soy sauce	0			
Table salt	0			
Tomato paste / ketchup	1		Y	
Vinegar	0			
White pepper	0			
No. of TDS food items detected		**2**	**21**	**5**

Table D.5: Other pesticides

Among the 187 TDS food items, TDS food items detected with the 20 other pesticides (including metabolites) are shown below:

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Cereals and their products (16 detected out of 21 items)	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**16**	**0**	**8**	**1**	**0**	**1**	**0**	**0**	**2**	**0**
Biscuit / Cookie											Y		Y							
Bread, plain											Y		Y			Y				
Bread, raisin											Y		Y	Y					Y	
Breakfast cereals											Y									
Bun, with savoury filling, baked											Y		Y							
Bun, with savoury filling, steamed	Y										Y								Y	
Bun, with sweet filling, steamed									Y		Y		Y							
Cake											Y									
Corn											Y									
Corn starch																				
Deep-fried dough, Chinese style											Y		Y							
Noodles, Chinese / Japanese style																				
Noodles, instant																				
Noodles, rice																				
Oats / Oatmeal																				
Pasta, Western style											Y									

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Pastries, Chinese style											Y									
Pie / Tart											Y		Y							
Pineapple bun											Y		Y							
Rice, unpolished											Y									
Rice, white											Y									
Vegetables and their products (38 detected out of 42 items)	**13**	**0**	**3**	**12**	**1**	**4**	**0**	**0**	**6**	**12**	**32**	**2**	**1**	**0**	**2**	**22**	**2**	**5**	**29**	**6**
Bamboo fungus											Y								Y	
Bamboo shoot											Y					Y			Y	
Beet root									Y		Y									
Bitter melon				Y						Y	Y					Y		Y	Y	
Blanching chives						Y					Y					Y			Y	
Broccoli / Cauliflower	Y									Y	Y					Y			Y	
Cabbage, Chinese (including Pe-tsai / Celery cabbage)											Y								Y	
Cabbage, Chinese flowering	Y			Y							Y				Y	Y			Y	
Cabbage, European variety																				
Cabbage, Pak-choi Chinese	Y			Y												Y			Y	
Cabbage, Pak-choi Chinese, dried											Y					Y			Y	
Carrot / Radish											Y								Y	
Celery											Y					Y			Y	Y
Chinese amaranth (Chinese spinach)	Y			Y					Y		Y					Y			Y	
Chinese kale	Y			Y												Y			Y	
Cucumber				Y						Y	Y					Y		Y	Y	

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Ear fungus																				
Eggplant			Y								Y					Y			Y	Y
Garlic											Y									
Ginger	Y										Y					Y				
Hairy gourd / wax gourd										Y	Y								Y	
Leaf mustard	Y			Y												Y			Y	Y
Lettuce, Chinese / European / Indian	Y		Y	Y						Y	Y					Y		Y	Y	
Mung bean sprout																				
Mushroom, button											Y		Y						Y	
Mushroom, shiitake, dried											Y	Y								
Onion										Y	Y						Y			
Pea shoots	Y			Y		Y				Y	Y				Y				Y	
Peppers (sweet pepper / chili pepper)			Y		Y	Y			Y	Y	Y					Y			Y	Y
Potato											Y									
Potato, fried										Y	Y						Y			
Preserved vegetables																Y			Y	
Pumpkin																				
Seaweed											Y									
Spinach	Y			Y					Y		Y					Y		Y	Y	
Sponge gourd																			Y	
Spring onion	Y			Y						Y	Y					Y		Y	Y	Y
Sweet potato									Y		Y	Y								

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Tomato	Y					Y				Y	Y					Y			Y	Y
Water spinach	Y			Y						Y	Y					Y			Y	
Watercress									Y							Y			Y	
Zucchini											Y								Y	
Legumes, nuts and seeds and their products (9 detected out of 9 items)	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**8**	**1**	**2**	**0**	**0**	**2**	**0**	**0**	**3**	**1**
Fermented soybean products											Y									
Green peas											Y		Y							
Green string beans (with pod)										Y	Y					Y			Y	Y
Peanut					Y						Y					Y			Y	
Peanut butter					Y						Y		Y							
Red bean											Y									
Soybean curd (Tofu)											Y									
Tree nuts	Y									Y	Y	Y								
Vermicelli, mung bean																			Y	
Fruits (18 detected out of 18 items)	**0**	**0**	**3**	**0**	**0**	**6**	**1**	**1**	**0**	**10**	**17**	**6**	**0**	**0**	**2**	**6**	**0**	**0**	**11**	**2**
Apple			Y							Y	Y				Y				Y	
Banana						Y				Y	Y	Y							Y	
Cherry			Y							Y	Y	Y							Y	
Dragon fruit											Y	Y								
Dried fruits						Y				Y	Y									
Durian						Y	Y				Y									

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Grapes						Y		Y		Y	Y				Y	Y			Y	Y
Kiwi											Y									
Longan / Lychee											Y					Y			Y	Y
Mandarin / Tangerine											Y	Y				Y			Y	
Mango										Y	Y								Y	
Melon										Y	Y									
Orange			Y								Y									
Papaya						Y				Y	Y	Y				Y			Y	
Peach										Y	Y	Y				Y			Y	
Pear										Y	Y					Y			Y	
Pineapple						Y					Y									
Watermelon																			Y	
Meat, poultry and game and their products (17 detected out of 17 items)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**17**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**3**	**0**
Beef									Y		Y					Y				
Beef tendon											Y									
Chicken meat, other than chicken wing									Y		Y					Y				
Chicken wing									Y		Y					Y				
Duck / goose, roasted											Y					Y				
Ham, pork											Y									
Liver, goose											Y					Y				
Liver, pig											Y									

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Luncheon meat											Y								Y	
Meat ball									Y		Y					Y				
Meat sausage											Y									
Mutton											Y					Y			Y	
Pork chop									Y		Y								Y	
Pork ribs									Y		Y									
Pork, barbequed											Y									
Pork, other than pork chop and pork ribs											Y									
Pork, roasted											Y									
Egg and their products (3 detected out of 3 items)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**
Egg, chicken									Y		Y									
Egg, lime preserved											Y					Y				
Egg, salted											Y					Y				
Fish, seafood and their products (24 detected out of 24 items)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**23**	**3**	**0**	**0**	**0**	**9**	**1**	**0**	**1**	**0**
Clam											Y	Y								
Crab												Y								
Cuttlefish											Y									
Fish ball / fish cake											Y									
Fish fillet											Y									
Fish, Dace, minced											Y					Y				
Fish, Golden thread											Y								Y	
Fish, Grass carp									Y		Y					Y				

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Fish, Grouper											Y					Y				
Fish, Mandarin fish									Y		Y					Y				
Fish, Mangrove red snapper									Y		Y					Y				
Fish, Pomfret / Pompano											Y					Y				
Fish, Salmon											Y					Y				
Fish, Tuna											Y						Y			
Fish, Yellow croaker									Y		Y					Y				
Lobster											Y									
Mantis shrimp											Y	Y								
Mussel											Y									
Oyster											Y									
Salted fish											Y									
Scallop											Y									
Shrimp / Prawn											Y									
Shrimp / Prawn, dried											Y					Y				
Squid											Y									
Dairy products (8 detected out of 8 items)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**8**	**0**	**0**	**1**	**0**	**5**	**0**	**0**	**0**	**0**
Cheese											Y									
Fermented / Cultured beverages, dairy based											Y					Y				
Ice-cream											Y			Y						
Milk beverages									Y		Y					Y				
Milk, condensed / evaporated											Y					Y				

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Milk, skim											Y									
Milk, whole									Y		Y					Y				
Yoghurt											Y					Y				
Fats and oils (2 detected out of 2 items)	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
Butter									Y		Y									
Vegetable oil		Y								Y									Y	
Beverages, alcoholic (2 detected out of 2 items)	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Beer	Y										Y									
Wine, red / white	Y					Y		Y			Y									
Beverages, non-alcoholic (8 detected out of 12 items)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**8**	**1**	**2**	**1**	**0**	**2**	**0**	**0**	**1**	**0**
Carbonated drink (including diet version)																				
Coconut water																				
Coffee									Y		Y					Y				
Fruit and / or vegetable juice										Y	Y	Y		Y					Y	
Malt drink											Y		Y							
Soybean drink											Y									
Tea (including lemon tea)											Y									
Tea, chrysanthemum											Y									
Tea, with milk											Y		Y							
Tea, with milk and tapioca pearls											Y					Y				
Water, bottled, distilled / purified																				
Water, drinking																				

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Mixed dishes (12 detected out of 12 items)	**2**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**2**	**12**	**0**	**5**	**0**	**0**	**2**	**1**	**1**	**6**	**2**
Dim sum, beef ball, steamed	Y			Y					Y	Y	Y					Y			Y	Y
Dim sum, Siu Mai, steamed											Y									
Dumpling / spring roll, fried											Y		Y						Y	Y
Dumpling, boiled (including wonton)											Y		Y							
Dumpling, steamed	Y			Y						Y	Y		Y						Y	
Glutinous rice dumpling											Y									
Hamburger				Y							Y		Y					Y	Y	
Pizza				Y							Y		Y						Y	
Rice-roll, plain, steamed											Y									
Soup, Chinese style											Y									
Soup, Western style											Y					Y	Y			
Turnip cake											Y								Y	
Snack foods (1 detected out of 1 item)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**
Potato chips									Y		Y	Y					Y		Y	
Sugars and confectionery (2 detected out of 5 items)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**
Chocolate											Y									
Honey																				
Jam								Y		Y	Y			Y					Y	
Sugar, brown / rock																				
Sugar, white, granulated																				

TDS Food Item	Pesticides detected																			
	Ametoctradin	Bixafen	Cyantraniliprole	Cyazofamid	Cyflumetofen	Ethephon	Fenazaquin	Fenpyrazamine	Fipronil	Fluxapyroxad	Fosetyl aluminium	Glufosinate ammonium	Glyphosate	Isofetamid	Isopyrazam	Lufenuron	Maleic hydrazide	Oxathiapiprolin	Pyraclostrobin	Pyriproxyfen
Condiments, sauces and herbs (9 detected out of 11 items)	**4**	**1**	**1**	**1**	**0**	**1**	**0**	**0**	**2**	**2**	**8**	**1**	**2**	**0**	**0**	**2**	**0**	**1**	**2**	**2**
Chicken powder / cube											Y									
Chinese parsley	Y		Y	Y					Y		Y					Y		Y	Y	Y
Curry sauce	Y								Y		Y		Y			Y			Y	Y
Oyster sauce												Y								
Salad dressing		Y									Y									
Sesame seed oil																				
Soy sauce											Y									
Table salt																				
Tomato paste / ketchup	Y					Y				Y	Y									
Vinegar	Y									Y	Y									
White pepper											Y		Y							
No. TDS food items detected	**23**	**2**	**7**	**17**	**3**	**12**	**1**	**3**	**26**	**31**	**158**	**15**	**20**	**4**	**4**	**60**	**5**	**7**	**61**	**13**

Appendix E

Pesticide or metabolite residue contents (μg/kg) detected in TDS food items

Part E.1: Neonicotinoids (Neonics)

Acetamiprid (ACE)

TDS Food Item [a]	Acetamiprid (ACE) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Bread, raisin	0.16-0.40	0.32-0.48	ND
Cake	0.38-0.61	ND	0.75-0.91
Rice, white	0.29	0.17	0.40
Vegetables and their products			
Bamboo fungus	0.075-0.15	ND	0.15
Bitter melon	13	25	0.23
Broccoli / Cauliflower	0.32-0.40	0.64	ND
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	0.075-0.15	ND	0.15
Cabbage, Chinese flowering	73	130	15
Cabbage, Pak-choi Chinese	3.9-4.0	7.8	ND
Cabbage, Pak-choi Chinese, dried	1.0	1.8	0.21
Carrot / Radish	0.48-0.56	ND	0.96
Celery	0.22	0.18	0.26
Chinese amaranth (Chinese spinach)	0.22-0.30	ND	0.44
Chinese kale	160	300	12
Cucumber	5.5-5.6	ND	11
Eggplant	17	1.6	32
Hairy gourd / wax gourd	6.8	8.7	4.9
Leaf mustard	5.0	6.5	3.4
Lettuce, Chinese / European / Indian	0.21-0.29	0.42	ND
Pea shoots	0.85-0.93	ND	1.7
Peppers (sweet pepper / chili pepper)	11	4.0	18
Potato	0.50-0.57	0.99	ND
Preserved vegetables	13	14	11
Pumpkin	0.11-0.19	0.22	ND
Spinach	2.8	5.3	0.32
Spring onion	17	27	7.4
Tomato	5.1	0.28	10
Water spinach	0.11-0.18	ND	0.21
Zucchini	1.2	1.5	0.92
Legumes, nuts and seeds and their products			
Green string beans (with pod)	4.1	7.8	0.33
Peanut	0.10-0.17	0.19	ND
Fruits			
Apple	4.9	5.8	3.9
Cherry	15	9.8	20
Dragon fruit	0.90-0.98	1.8	ND
Dried fruits	0.27	0.39	0.15
Durian	0.18-0.25	0.35	ND

TDS Food Item [a]	Acetamiprid (ACE) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Longan / Lychee	1.5-1.5	ND	2.9
Mandarin / Tangerine	3.1	2.6	3.6
Mango	0.21	0.20	0.22
Melon	0.47-0.54	ND	0.93
Orange	0.54	0.90	0.18
Papaya	17	5.4	29
Peach	4.5-4.5	8.9	ND
Pear	6.1	2.9	9.3
Watermelon	4.1	2.9	5.2
Fish and seafood and their products			
Crab	0.29-0.52	ND	0.57-0.73
Dairy products			
Ice-cream	0.075-0.31	0.15-0.31	ND
Beverages, alcoholic			
Wine, red / white	0.10-0.18	ND	0.20
Beverages, non-alcoholic			
Fruit and / or vegetable juice	2.0	3.6	0.38
Tea (including lemon tea)	0.73	0.71	0.75
Tea, chrysanthemum	0.74	0.74	0.73
Tea, with milk	0.72-0.88	0.64-0.80	0.79-0.95
Tea, with milk and tapioca pearls	0.34-0.58	ND	0.68-0.84
Mixed dishes			
Hamburger	0.56-0.71	1.1	ND
Pizza	0.85-1.0	0.19-0.35	1.5-1.7
Soup, Chinese style	0.62-0.70	0.50-0.66	0.73
Turnip cake	0.35-0.51	0.52-0.68	0.17-0.33
Sugars and confectionery			
Honey	0.10-0.17	0.19	ND
Jam	0.075-0.15	0.15	ND
Condiments, sauces and herbs			
Chinese parsley	7.3	1.5	13
Curry sauce	8.6	6.1	11
Tomato paste / ketchup	0.15-0.23	ND	0.30
White pepper	4.7	5.6	3.8

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating acetamiprid (ACE) contents, a factor of 1.067 is applied for converting the concentration of its metabolite, acetamiprid-N-desmethyl, expressed as ACE (animal commodities only).

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Clothianidin (CLO)

TDS Food Item [a]	Clothianidin (CLO) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Bread, raisin	0.085-0.16	0.17	ND
Bun, with savoury filling, steamed	0.75-0.83	1.5	ND
Corn	0.18-0.25	0.35	ND
Rice, unpolished	0.20-0.27	0.39	ND
Vegetables and their products			
Bamboo fungus	1.3	0.71	1.8
Beet root	0.30	0.43	0.16
Bitter melon	23	9.9	**37**
Blanching chives	12	17	6.3
Broccoli / Cauliflower	0.090-0.17	ND	0.18
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	3.8	0.79	6.8
Cabbage, Chinese flowering	2.1	0.42	3.8
Cabbage, European variety	0.12-0.19	0.23	ND
Cabbage, Pak-choi Chinese	0.78	0.25	1.3
Cabbage, Pak-choi Chinese, dried	0.69	0.37	1.0
Carrot / Radish	0.61	0.76	0.45
Chinese amaranth (Chinese spinach)	5.4	9.6	1.2
Chinese kale	21	26	15
Cucumber	22	7.5	**36**
Ear fungus	0.10-0.17	ND	0.19
Eggplant	6.3	8.2	4.3
Garlic	0.33	0.19	0.47
Ginger	130	11	250
Hairy gourd / wax gourd	5.4	2.9	7.8
Leaf mustard	10	7.2	13
Lettuce, Chinese / European / Indian	3.9	4.6	3.2
Mushroom, button	0.45-0.52	0.89	ND
Onion	0.86	1.1	0.61
Pea shoots	0.77	1.2	0.34
Peppers (sweet pepper / chili pepper)	13	7.2	18
Potato	11	20	1.5
Potato, fried	1.9	2.5	1.2
Preserved vegetables	0.56	0.53	0.59
Pumpkin	0.30	0.31	0.28
Seaweed	0.65-0.73	1.3	ND
Spinach	220	420	17
Sponge gourd	3.6	1.8	5.3
Spring onion	11	12	10
Sweet potato	0.62	0.94	0.30
Tomato	5.7	7.5	3.8
Water spinach	0.85	1.4	0.29
Watercress	2.2	2.2	2.2
Zucchini	0.43	0.23	0.63
Legumes, nuts and seeds and their products			
Green string beans (with pod)	8.5	4.9	12
Peanut	0.46	0.48	0.43
Fruits			
Apple	0.080-0.16	ND	0.16

TDS Food Item [a]	Clothianidin (CLO) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Banana	0.19-0.26	0.37	ND
Dragon fruit	0.76	1.2	0.31
Grapes	0.40-0.48	0.80	ND
Longan / Lychee	6.2	10	2.4
Mandarin / Tangerine	0.35	0.16	0.54
Mango	3.4	4.3	2.4
Melon	13	1.1	**24**
Orange	0.31	0.46	0.16
Papaya	14	**25**	3.9
Peach	9.4	2.7	16
Pear	7.6	7.7	7.5
Watermelon	1.6	2.5	0.62
Meat, poultry and game and their products			
Duck / goose, roasted	0.26-0.33	0.51	ND
Dairy products			
Yoghurt	0.14-0.21	0.27	ND
Beverages, alcoholic			
Wine, red / white	0.26	0.31	0.21
Beverages, non-alcoholic			
Fruit and / or vegetable juice	0.26-0.33	ND	0.51
Tea, chrysanthemum	0.33	0.18	0.48
Mixed dishes			
Dim sum, beef ball, steamed	0.83	0.97	0.69
Dumpling / spring roll, fried	6.7	11	2.3
Dumpling, boiled (including wonton)	0.95-1.0	ND	1.9
Dumpling, steamed	2.1	4.0	0.29
Glutinous rice dumpling	0.21	0.20	0.21
Hamburger	0.23	0.24	0.21
Pizza	0.33	0.40	0.26
Soup, Chinese style	0.15-0.22	ND	0.29
Soup, Western style	0.29	0.21	0.36
Turnip cake	11	1.9	20
Snack foods			
Potato chips	0.49	0.79	0.18
Condiments, sauces and herbs			
Chicken powder / cube	0.080-0.16	0.16	ND
Chinese parsley	31	33	28
Curry sauce	2.0	1.5	2.4
Tomato paste / ketchup	0.31-0.39	ND	0.62
White pepper	1.9	1.2	2.5

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Figures in **bold** were samples detected with concentration levels exceeding the maximum residue limits (MRLs) stipulated in the Pesticide Residues in Food Regulation (Cap. 132CM).

Dinotefuran (DIN)

TDS Food Item [a]	Dinotefuran (DIN) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Bun, with savoury filling, steamed	1.7-2.7	2.6-3.6	0.81-1.8
Vegetables and their products			
Bitter melon	4.1-4.6	0.18-1.1	8.1
Blanching chives	0.10-1.1	0.20-1.2	ND
Cabbage, Chinese flowering	8.6-9.1	0.18-1.1	17
Cabbage, European variety	0.55-1.6	ND	1.1-2.1
Cabbage, Pak-choi Chinese	2.8-3.3	0.19-1.1	5.4
Carrot / Radish	0.16-1.2	0.32-1.3	ND
Celery	8.7-9.2	0.17-1.1	17
Chinese amaranth (Chinese spinach)	1.5-2.5	3.0-4.0	ND
Chinese kale	28-29	52-53	4.9-5.9
Cucumber	19-20	4.5-5.5	34
Eggplant	11-12	15-16	6.7-7.7
Hairy gourd / wax gourd	4.6-5.1	8.9	0.22-1.2
Leaf mustard	6.2-6.7	11	1.6-2.6
Lettuce, Chinese / European / Indian	0.23-1.3	ND	0.45-1.4
Pea shoots	0.11-1.1	ND	0.22-1.2
Peppers (sweet pepper / chili pepper)	110-110	19-20	200
Potato	0.17-1.2	0.33-1.3	ND
Preserved vegetables	2.7-3.2	1.7-2.7	3.7
Pumpkin	0.17-1.2	0.34-1.3	ND
Sponge gourd	0.55-1.6	1.1-2.1	ND
Spring onion	11-12	19	3.8-4.8
Tomato	40-40	0.27-1.2	79
Watercress	6.0-6.9	0.90-1.9	11-12
Zucchini	5.1-5.6	9.7	0.54-1.5
Legumes, nuts and seeds and their products			
Green string beans (with pod)	0.39-1.3	0.50-1.5	0.27-1.2
Peanut	0.19-1.2	0.37-1.3	ND
Fruits			
Durian	0.085-1.1	ND	0.17-1.1
Grapes	2.1-2.6	ND	4.1
Mandarin / Tangerine	11-12	ND	22-23
Papaya	10-11	0.87-1.8	19
Peach	5.4-5.9	11	ND
Pear	0.92-1.9	0.34-1.3	1.5-2.5
Watermelon	18	20	15
Meat, poultry and game and their products			
Liver, goose	0.44-1.5	ND	0.87-1.8
Pork ribs	0.41-1.4	0.82-1.8	ND
Pork, barbequed	0.43-1.5	ND	0.85-1.8
Pork, other than pork chop and pork ribs	0.085-1.1	0.17-1.1	ND
Beverages, non-alcoholic			
Fruit and / or vegetable juice	1.5-2.5	2.9-3.9	ND
Tea (including lemon tea)	3.0-3.5	0.71-1.7	5.3
Tea, with milk	0.42-1.4	0.26-1.2	0.58-1.5

TDS Food Item [a]	Dinotefuran (DIN) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Tea, with milk and tapioca pearls	0.60-1.6	ND	1.2-2.2
Mixed dishes			
Dim sum, beef ball, steamed	0.39-1.4	0.77-1.7	ND
Dumpling / spring roll, fried	0.22-1.2	0.43-1.4	ND
Dumpling, boiled (including wonton)	0.32-1.3	ND	0.63-1.6
Dumpling, steamed	0.32-1.4	ND	0.64-1.6
Glutinous rice dumpling	0.11-1.1	0.21-1.2	ND
Hamburger	0.27-1.3	0.53-1.5	ND
Pizza	0.32-1.3	0.33-1.3	0.31-1.3
Turnip cake	0.88-1.8	0.36-1.3	1.4-2.4
Condiments, sauces and herbs			
Chinese parsley	31-32	62	0.46-1.4
Curry sauce	0.39-1.3	0.27-1.2	0.51-1.5

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating dinotefuran (DIN) contents, a factor of 1.278 is applied for converting the concentration of its metabolite, 1-Methyl-3-(tetrahydro-3-furylmethyl) urea (UF), expressed as DIN.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Flupyradifurone (FLU)

TDS Food Item [a]	Flupyradifurone (FLU) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Cake	0.14-3.0	ND	0.27-3.0
Corn	5.9-6.0	2.9-3.1	8.8-8.9
Vegetables and their products			
Beet root	11-11	18-18	3.8-4.0
Broccoli / Cauliflower	4.3-4.5	5.1-5.3	3.5-3.6
Cabbage, Chinese flowering	5.0-5.2	6.6-6.7	3.5-3.6
Cabbage, European variety	2.7-4.3	5.5-5.6	ND
Chinese kale	11-11	18-18	4.8-4.9
Cucumber	16-17	ND	31-31
Eggplant	17-18	ND	34
Ginger	2.7-4.2	ND	5.3-5.5
Hairy gourd / wax gourd	9.5-9.7	9.0-9.1	10-10
Leaf mustard	1.8-3.3	0.36-3.1	3.3-3.4
Onion	1.4-2.9	ND	2.7-2.9
Pea shoots	9.1-11	ND	18-18
Preserved vegetables	10-10	16-16	4.6-4.7
Sponge gourd	5.6-7.1	11	ND
Spring onion	6.4-6.6	9.3-9.5	3.5-3.6

TDS Food Item [a]	Flupyradifurone (FLU) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Sweet potato	3.5-5.0	ND	7.0-7.1
Tomato	5.6-7.0	0.91-3.7	10
Water spinach	6.5-6.7	4.9-5.1	8.1-8.2
Legumes, nuts and seeds and their products			
Fermented soybean products	13-13	8.6-8.8	16-17
Green string beans (with pod)	270-270	320	220-220
Fruits			
Cherry	9.8-10.0	5.1-5.3	14-15
Dragon fruit	26-26	40-40	11-11
Durian	1.9-3.4	3.8-4.0	ND
Grapes	11-13	ND	21-24
Mandarin / Tangerine	10-10	15-15	5.3-5.5
Mango	2.6-4.1	5.1-5.3	ND
Orange	0.10-2.9	0.19-2.9	ND
Papaya	2.7-2.9	2.7-2.9	2.7-2.9
Pear	2.3-3.8	ND	4.6-4.7
Watermelon	9.4-9.6	4.8-4.9	14-14
Dairy products			
Fermented / Cultured beverages, dairy based	0.13-2.9	0.25-3.0	ND
Sugars and confectionery			
Jam	0.28-3.0	0.36-3.1	0.19-2.9
Condiments, sauces and herbs			
Curry sauce	2.6-4.0	ND	5.2
Soy sauce	2.1-3.6	ND	4.2-4.4
Tomato paste / ketchup	1.9-3.4	ND	3.9

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating flupyradifurone (FLU) contents, a factor of 1.832 is applied for converting the concentration of its metabolite, 6-chloronicotinic acid, expressed as FLU (plant commodities only).

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Imidacloprid (IMI)

TDS Food Item [a]	Imidacloprid (IMI) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Bread, raisin	0.63-3.1	0.97-3.4	0.28-2.7
Bun, with savoury filling, steamed	0.24-2.7	0.47-2.9	ND
Corn	5.2-5.3	2.6-2.7	7.8-7.9
Rice, unpolished	1.1-3.6	2.2-4.6	ND
Vegetables and their products			

TDS Food Item [a]	Imidacloprid (IMI) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Bamboo fungus	0.10-2.6	0.19-2.6	ND
Beet root	10	17	3.7
Bitter melon	14-17	28-30	ND
Blanching chives	1.5-4.0	2.9-5.3	ND
Broccoli / Cauliflower	4.4	5.1	3.7
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	0.57-3.0	0.28-2.7	0.86-3.3
Cabbage, Chinese flowering	4.6-4.7	6.2	3.1-3.2
Cabbage, European variety	4.4-5.6	6.5	2.3-4.7
Cabbage, Pak-choi Chinese	0.29-2.7	0.27-2.7	0.30-2.7
Cabbage, Pak-choi Chinese, dried	0.12-2.6	0.23-2.7	ND
Carrot / Radish	0.13-2.6	0.25-2.7	ND
Celery	5.2-7.6	9.9-12	0.53-3.0
Chinese amaranth (Chinese spinach)	2.3-4.7	2.3-4.7	2.3-4.7
Chinese kale	12	19	5.7
Cucumber	18-20	7.0-9.4	30
Eggplant	11-13	1.2-3.6	22
Ginger	13-14	ND	26
Hairy gourd / wax gourd	18	17	19
Leaf mustard	4.8-6.0	2.0-4.4	7.5
Lettuce, Chinese / European / Indian	1.3-3.7	1.6-4.0	1.0-3.4
Onion	1.6-2.8	0.15-2.6	3.0
Pea shoots	40-41	0.18-2.6	80
Peppers (sweet pepper / chili pepper)	26-28	14-16	37-39
Potato	0.14-2.6	0.28-2.7	ND
Potato, fried	1.3-3.7	0.72-3.2	1.8-4.2
Preserved vegetables	13	19	7.3
Pumpkin	0.50-3.0	1.0-3.4	ND
Spinach	68-70	110-110	25-27
Sponge gourd	5.5-6.7	11	0.19-2.6
Spring onion	38	71	4.1
Sweet potato	3.1-4.5	ND	6.2-6.3
Tomato	4.5-5.8	0.27-2.7	8.8-8.9
Water spinach	6.7	5.2	8.1
Watercress	0.11-2.6	0.22-2.7	ND
Zucchini	3.2-5.6	5.8-8.2	0.50-2.9
Legumes, nuts and seeds and their products			
Fermented soybean products	11-11	7.6-7.8	15-15
Green string beans (with pod)	250	260	240
Peanut	0.085-2.6	0.17-2.6	ND
Fruits			
Banana	7.7-10	0.34-2.8	15-17
Cherry	31	49	13
Dragon fruit	23-23	36-36	9.6-9.7
Dried fruits	0.32-2.7	0.17-2.6	0.46-2.9
Durian	2.0-3.3	3.8	0.30-2.7
Grapes	9.5-12	16-18	3.0-5.4
Longan / Lychee	20-22	25-27	15-17
Mandarin / Tangerine	11	17	5.4
Mango	2.6-3.9	5.2	ND
Orange	2.0-4.4	0.21-2.6	3.7-6.1
Papaya	11	14	8.0

TDS Food Item [a]	Imidacloprid (IMI) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Peach	4.0-6.5	7.9-10	ND
Pear	6.4-7.6	0.20-2.6	13
Watermelon	8.8	4.6	13
Fish and seafood and their products			
Fish, Dace, minced	0.15-2.7	0.30-2.7	ND
Dairy products			
Ice-cream	0.090-2.6	0.18-2.6	ND
Beverages, alcoholic			
Wine, red / white	0.67-3.1	0.54-3.0	0.79-3.2
Beverages, non-alcoholic			
Fruit and / or vegetable juice	1.6-4.0	0.23-2.7	2.9-5.3
Tea (including lemon tea)	0.45-2.9	0.43-2.9	0.47-2.9
Tea, chrysanthemum	0.87-3.3	0.87-3.3	0.87-3.3
Tea, with milk	0.22-2.6	0.17-2.6	0.26-2.7
Tea, with milk and tapioca pearls	0.31-2.8	ND	0.61-3.0
Mixed dishes			
Dim sum, beef ball, steamed	1.7-4.2	2.9-5.3	0.59-3.0
Dumpling / spring roll, fried	0.24-2.7	0.20-2.6	0.28-2.7
Dumpling, boiled (including wonton)	0.11-2.6	ND	0.21-2.6
Dumpling, steamed	0.17-2.7	0.34-2.8	ND
Hamburger	0.30-2.8	0.59-3.0	ND
Pizza	0.64-3.1	1.1-3.5	0.18-2.6
Soup, Western style	0.32-2.8	0.64-3.1	ND
Turnip cake	1.6-4.0	3.0-5.4	0.21-2.6
Snack foods			
Potato chips	0.84-3.3	0.97-3.4	0.70-3.1
Sugars and confectionery			
Chocolate	0.12-2.6	ND	0.23-2.7
Jam	0.42-2.9	ND	0.84-3.3
Condiments, sauces and herbs			
Chinese parsley	8.0-10	13-15	2.9-5.3
Curry sauce	5.9-7.1	2.4-4.8	9.4
Sesame seed oil	0.34-2.8	0.40-2.8	0.28-2.7
Soy sauce	1.9-3.2	ND	3.7-3.9
Tomato paste / ketchup	2.6-3.8	0.96-3.4	4.2
White pepper	3.7-6.1	2.7-5.1	4.6-7.0

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating imidacloprid (IMI) contents, a factor of 1.623 is applied for converting the concentration of its metabolite, 6-chloronicotinic acid, expressed as IMI.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (LB-UB).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Imidaclothiz (IMID)

TDS Food Item [a]	Imidaclothiz (IMID) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fruits			
Papaya	2.4-2.5	4.8	ND
Condiments, sauces and herbs			
Chinese parsley	2.7-2.7	5.3	ND

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Nitenpyram (NIT)

TDS Food Item [a]	Nitenpyram (NIT) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Broccoli / Cauliflower	0.49-0.69	0.98	ND
Cabbage, European variety	0.55-0.75	1.1	ND
Cucumber	15	9.7	20
Peppers (sweet pepper / chili pepper)	3.5	3.4	3.6
Sponge gourd	0.70-0.90	1.4	ND
Tomato	2.9-3.1	ND	5.7
Watercress	1.1-1.3	ND	2.2
Fruits			
Watermelon	1.2-1.4	ND	2.3
Mixed dishes			
Pizza	0.60-0.80	1.2	ND

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Sulfoxaflor (SUL)

TDS Food Item [a]	Sulfoxaflor (SUL) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Celery	1.3-1.7	ND	2.6
Cucumber	0.48-0.85	ND	0.95
Hairy gourd / wax gourd	1.8-2.2	ND	3.6

TDS Food Item [a]	Sulfoxaflor (SUL) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fruits			
Apple	0.43-0.81	0.86	ND
Grapes	1.0-1.4	2.0	ND
Mandarin / Tangerine	5.0	8.8	1.1
Mango	1.8-2.1	3.5	ND
Peach	7.0-7.4	ND	14
Pear	0.44-0.81	0.87	ND
Beverages, alcoholic			
Wine, red / white	0.44-0.82	0.88	ND
Mixed dishes			
Dumpling / spring roll, fried	0.40-0.78	ND	0.80

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Thiacloprid (THIA)

TDS Food Item [a]	Thiacloprid (THIA) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Preserved vegetables	0.090-0.17	0.18	ND
Fruits			
Apple	1.1	1.9	0.30
Cherry	4.3-4.4	ND	8.6
Pear	0.85-0.93	ND	1.7
Watermelon	0.18-0.25	0.35	ND
Beverages, non-alcoholic			
Fruit and / or vegetable juice	0.075-0.15	0.15	ND
Tea (including lemon tea)	0.075-0.15	0.15	ND

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Thiamethoxam (THI)

TDS Food Item [a]	Thiamethoxam (THI) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Bun, with savoury filling, steamed	0.95-2.0	1.9-2.8	ND
Bun, with sweet filling, steamed	0.14-1.1	ND	0.27-1.2
Corn	1.4-1.4	2.7	ND
Vegetables and their products			
Bamboo fungus	5.5	3.2	7.8
Beet root	0.38-0.46	0.76	ND
Bitter melon	36	45	26
Blanching chives	0.38-0.46	0.76	ND
Broccoli / Cauliflower	0.51	0.45	0.56
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	20	9.7	31
Cabbage, Chinese flowering	1.0	0.73	1.3
Cabbage, European variety	5.1	6.4	3.8
Cabbage, Pak-choi Chinese	2.9	1.3	4.5
Cabbage, Pak-choi Chinese, dried	0.39-0.47	0.78	ND
Carrot / Radish	3.1	4.4	1.7
Celery	1.1	0.71	1.5
Chinese amaranth (Chinese spinach)	0.35-0.43	0.70	ND
Chinese kale	460	920	5.8
Cucumber	84	7.6	160
Eggplant	59	49	68
Garlic	0.42	0.50	0.33
Ginger	18	32	3.2
Hairy gourd / wax gourd	32	18	45
Leaf mustard	11	13	8.9
Lettuce, Chinese / European / Indian	19	3.7	34
Onion	8.4	0.84	16
Pea shoots	1.8	1.2	2.4
Peppers (sweet pepper / chili pepper)	21	5.2	37
Potato	7.6	14	1.1
Potato, fried	1.1	0.80	1.4
Preserved vegetables	1.8	1.5	2.1
Pumpkin	0.40	0.31	0.48
Seaweed	0.50-0.58	1.0	ND
Spinach	120	230	1.8
Sponge gourd	14	13	15
Spring onion	83	46	120
Tomato	9.9	5.7	14
Water spinach	2.5	2.8	2.2
Watercress	8.2	15	1.4
Zucchini	3.4	0.66	6.2
Legumes, nuts and seeds and their products			
Green peas	0.29-0.36	0.57	ND
Green string beans (with pod)	430	**200**	**660**
Peanut	0.31	0.28	0.34
Fruits			
Banana	0.080-0.16	0.16	ND
Dragon fruit	2.7	3.8	1.6
Dried fruits	1.2-1.3	ND	2.4
Durian	0.59	0.73	0.44

TDS Food Item [a]	Thiamethoxam (THI) Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Grapes	1.0-1.1	2.0	ND
Longan / Lychee	0.75-0.83	1.5	ND
Mandarin / Tangerine	0.58	0.16	1.0
Melon	57	4.5	110
Orange	0.18-0.25	0.35	ND
Papaya	14	**19**	8.1
Peach	0.36-0.44	0.72	ND
Pear	5.8	2.3	9.3
Watermelon	27	48	5.3
Fish and seafood and their products			
Fish, Dace, minced	0.10-1.1	0.20-1.1	ND
Beverages, alcoholic			
Wine, red / white	0.45	0.48	0.41
Beverages, non-alcoholic			
Fruit and / or vegetable juice	2.0-2.1	ND	4.0
Tea (including lemon tea)	0.42	0.50	0.33
Tea, chrysanthemum	0.67	0.71	0.62
Tea, with milk	0.49	0.36	0.61
Tea, with milk and tapioca pearls	0.25-0.32	ND	0.49
Mixed dishes			
Dim sum, beef ball, steamed	5.9	3.1	8.6
Dumpling / spring roll, fried	1.0	1.1	0.95
Dumpling, boiled (including wonton)	0.36-0.44	ND	0.72
Dumpling, steamed	0.45	0.35	0.55
Glutinous rice dumpling	0.43-1.4	0.30-1.2	0.55-1.5
Hamburger	4.6-5.5	8.6-9.5	0.56-1.5
Pizza	0.42-1.3	0.59-1.5	0.25-1.2
Soup, Chinese style	0.37-1.3	0.44-1.4	0.30-1.2
Soup, Western style	0.78-1.7	0.96-1.9	0.60-1.5
Turnip cake	6.1	8.5	3.6
Snack foods			
Potato chips	0.42	0.55	0.29
Condiments, sauces and herbs			
Chinese parsley	110	200	17
Curry sauce	7.7	4.3	11
Tomato paste / ketchup	0.28-0.35	ND	0.55
White pepper	49	23	75

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating thiamethoxam (THI) contents, a factor of 1.238 is applied for converting the concentration of its metabolite, N-(2-Chlorothiazol-5-ylmethyl)-N'-nitroguanidine (CGA 265307), expressed as THI (poultry only).

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Figures in **bold** were samples detected with concentration levels exceeding the maximum residue limits (MRLs) stipulated in the Pesticide Residues in Food Regulation (Cap. 132CM).

Part E.2: Organophosphorus pesticides (OPPs)

Acephate

TDS Food Item [a]	Acephate Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Leaf mustard	0.40-12	0.79-12	ND
Legumes, nuts and seeds and their products			
Green string beans (with pod)	0.80-12	ND	1.6-13
Fruits			
Mango	11-17	21	ND
Condiments, sauces and herbs			
Chinese parsley	33-39	66	ND

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating acephate contents, a factor of 7.5 is applied for converting the concentration of its metabolite, methamidophos, expressed as acephate.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Chlorpyrifos

TDS Food Item [a]	Chlorpyrifos Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Bun, with savoury filling, steamed	0.10-0.17	ND	0.19
Noodles, Chinese / Japanese style	0.085-0.16	0.17	ND
Pastries, Chinese style	0.19-0.26	ND	0.37
Vegetables and their products			
Bamboo fungus	1.9	1.7	2.0
Bamboo shoot	0.48-0.55	ND	0.95
Beet root	0.95-1.0	1.9	ND
Blanching chives	2.6	0.48	4.8
Broccoli / Cauliflower	0.085-0.16	0.17	ND
Cabbage, Pak-choi Chinese, dried	29	57	0.49
Chinese kale	0.44	0.66	0.22
Ear fungus	1.4	0.15	2.6
Lettuce, Chinese / European / Indian	0.44-0.52	ND	0.88
Peppers (sweet pepper / chili pepper)	2.6-2.7	ND	5.2
Preserved vegetables	24	17	31
Pumpkin	0.17-0.24	0.33	ND
Spinach	2.8	0.70	4.9
Sponge gourd	0.23-0.30	ND	0.45

TDS Food Item [a]	Chlorpyrifos Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Spring onion	1.1	1.4	0.82
Watercress	9.3	4.6	14
Legumes, nuts and seeds and their products			
Peanut	0.98	1.8	0.16
Peanut butter	0.16-0.24	0.32	ND
Red bean	0.080-0.16	0.16	ND
Fruits			
Grapes	0.14-0.21	ND	0.27
Mango	0.27	0.16	0.37
Pear	1.1	0.84	1.4
Fish and seafood and their products			
Clam	0.10-0.18	ND	0.20
Fish, Dace, minced	0.35	0.23	0.46
Fish, Grass carp	1.7	1.7	1.6
Fish, Mandarin fish	0.49	0.56	0.42
Fish, Pomfret / Pompano	0.10-0.17	ND	0.19
Fats and oils			
Vegetable oil	3.4	2.6	4.2
Beverages, non-alcoholic			
Fruit and / or vegetable juice	0.080-0.16	0.16	ND
Malt drink	0.090-0.17	0.18	ND
Mixed dishes			
Dim sum, beef ball, steamed	0.75	0.92	0.57
Dumpling / spring roll, fried	0.14-0.21	0.27	ND
Dumpling, steamed	0.50-0.58	ND	1.0
Glutinous rice dumpling	0.33	0.39	0.27
Pizza	0.080-0.16	0.16	ND
Snack foods			
Potato chips	0.10-0.17	0.19	ND
Sugars and confectionery			
Chocolate	0.28	0.41	0.15
Condiments, sauces and herbs			
Chinese parsley	18	31	4.1
Curry sauce	1.2	1.3	1.0
Sesame seed oil	0.22-0.29	0.43	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Chlorpyrifos methyl

TDS Food Item [a]	Chlorpyrifos Methyl Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Biscuit / Cookie	0.37-0.57	0.73	ND
Pasta, Western style	0.85-1.1	1.7	ND
Mixed dishes			
Pizza	0.23-0.43	0.46	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Diazinon

TDS Food Item [a]	Diazinon Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Cabbage, Pak-choi Chinese, dried	0.085-0.16	ND	0.17
Peppers (sweet pepper / chili pepper)	0.10-0.18	0.20	ND
Meat, poultry and game and their products			
Beef	0.15-0.23	0.30	ND
Mutton	0.65-0.73	ND	1.3
Mixed dishes			
Hamburger	0.70-0.78	ND	1.4

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Dichlorvos

TDS Food Item [a]	Dichlorvos Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Bread, raisin	0.90-1.28	1.8	ND
Vegetables and their products			
Cucumber	5.0-5.3	9.9	ND
Beverages, non-alcoholic			
Coffee	2.4	2.9	1.9
Mixed dishes			
Rice-roll, plain, steamed	0.55-0.93	1.1	ND

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Dimethoate

TDS Food Item [a]	Dimethoate Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Bitter melon	0.33-0.66	ND	0.65-0.80
Leaf mustard	1.4-1.7	2.9	ND
Onion	1.6-2.0	3.3-3.4	ND
Peppers (sweet pepper / chili pepper)	0.93-1.3	1.9-2.0	ND
Spring onion	3.1-3.5	6.3-6.4	ND
Water spinach	0.44-0.78	ND	0.88-1.0
Fruits			
Mandarin / Tangerine	18-18	ND	35-35
Papaya	3.8-4.1	ND	7.5-7.7
Mixed dishes			
Dim sum, beef ball, steamed	1.4-1.7	ND	2.8-2.9
Sugars and confectionery			
Jam	0.15-0.60	0.29-0.67	ND

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c For calculating dimethoate contents, a factor of 2.5 is applied for converting the concentration of its metabolite, omethoate, expressed as dimethoate.
d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).
e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Disulfoton

TDS Food Item [a]	Disulfoton Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Cabbage, Pak-choi Chinese, dried	0.15-1.6	0.29-1.6	ND

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating disulfoton contents, factors of 0.896, 0.945, 1.062, 0.945 and 1 are applied for converting the concentrations of its metabolites, disulfoton sulphone, disulfoton sulphoxide, demeton-S, demeton-S sulphone and demeton-S sulphoxide, respectively, expressed as disulfoton.
d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).
e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Edifenphos

TDS Food Item [a]	Edifenphos Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Meat, poultry and game and their products			
Liver, pig	0.16-0.23	0.31	ND
Fish and seafood and their products			
Crab	0.080-0.16	0.16	ND
Salted fish	0.085-0.16	0.17	ND

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Ethion

TDS Food Item [a]	Ethion Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fruits			
Mandarin / Tangerine	0.10-0.17	ND	0.19
Condiments, sauces and herbs			
Curry sauce	6.0	8.2	3.7

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Fenthion

TDS Food Item [a]	Fenthion Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Peppers (sweet pepper / chili pepper)	5.3-6.8	11-12	ND
Legumes, nuts and seeds and their products			
Green string beans (with pod)	50-50	**86**	14-15
Meat, poultry and game and their products			
Liver, pig	0.42-2.0	0.84-2.1	ND
Mixed dishes			
Pizza	0.19-2.1	0.38-2.2	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating fenthion contents, factors of 0.897, 0.946, 1.061, 0.946 and 1 are applied for converting the concentrations of its metabolites, fenthion sulphone, fenthion sulphoxide, fenthion oxon, fenthion oxon sulphone and fenthion oxon sulphoxide, respectively, expressed as fenthion.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Figure in **bold** was samples detected with concentration level exceeding the maximum residue limit (MRL) stipulated in the Pesticide Residues in Food Regulation (Cap. 132CM).

Fosthiazate

TDS Food Item [a]	Fosthiazate Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Beet root	0.085-0.16	ND	0.17
Bitter melon	6.5-6.6	ND	13
Chinese amaranth (Chinese spinach)	0.28-0.35	0.55	ND
Ginger	2.9	0.23	5.5
Hairy gourd / wax gourd	0.18-0.26	ND	0.36
Lettuce, Chinese / European / Indian	1.0-1.1	ND	2.0
Peppers (sweet pepper / chili pepper)	4.6-4.7	ND	9.2
Potato	0.20	0.15	0.25
Sponge gourd	0.26-0.33	0.51	ND
Zucchini	1.5-1.5	ND	2.9
Legumes, nuts and seeds and their products			
Green string beans (with pod)	0.47-0.55	ND	0.94
Fruits			
Melon	4.2-4.2	8.3	ND
Condiments, sauces and herbs			
Chinese parsley	4.2	0.81	7.6

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Isocarbophos

TDS Food Item [a]	Isocarbophos Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Spring onion	19	14	23
Mixed dishes			
Dim sum, beef ball, steamed	0.56	0.40	0.72
Condiments, sauces and herbs			
Chinese parsley	1.6	0.78	2.5

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Malathion

TDS Food Item [a]	Malathion Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Cake	0.085-0.16	0.17	ND
Oats / Oatmeal	0.16-0.23	ND	0.31
Fruits			
Mandarin / Tangerine	1.8-1.9	3.6	ND
Orange	0.16-0.24	ND	0.32
Fats and oils			
Vegetable oil	0.48	0.25	0.71
Beverages, non-alcoholic			
Fruit and / or vegetable juice	0.21-0.29	0.42	ND
Sugars and confectionery			
Jam	0.24-0.31	0.47	ND
Condiments, sauces and herbs			
Chinese parsley	3.1-3.1	6.1	ND

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Methamidophos

TDS Food Item [a]	Methamidophos Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fruits			
Mango	0.80-1.6	1.6	ND
Condiments, sauces and herbs			
Chinese parsley	2.8-3.5	5.5	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Methidathion

TDS Food Item [a]	Methidathion Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Condiments, sauces and herbs			
Curry sauce	0.28-0.48	0.55	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Phorate

TDS Food Item [a]	Phorate Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Biscuit / Cookie	0.11-1.5	0.22-1.6	ND
Pastries, Chinese style	0.10-1.5	0.20-1.5	ND
Pie / Tart	0.52-1.9	1.0-2.4	ND
Fruits			
Pear	0.075-1.5	ND	0.15-1.5
Meat, poultry and game and their products			
Pork, barbequed	0.36-1.7	0.37-1.7	0.36-1.7
Pork, roasted	0.17-1.6	ND	0.35-1.7
Fish and seafood and their products			
Fish, Dace, minced	0.65-1.8	1.3-2.0	ND
Beverages, non-alcoholic			
Tea, chrysanthemum	0.080-1.5	0.16-1.5	ND
Mixed dishes			
Glutinous rice dumpling	0.26-1.7	0.53-1.9	ND

TDS Food Item [a]	Phorate Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Turnip cake	0.22-1.5	0.43-1.6	ND
Condiments, sauces and herbs			
Curry sauce	1.6-3.0	ND	3.2-4.5

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating phorate contents, factors of 0.891, 0.942, 1.066, 0.942 and 1 are applied for converting the concentrations of its metabolites phorate sulphone, phorate sulphoxide, phorate oxon, phorate oxon sulphone and phorate oxon sulphoxide, respectively, expressed as phorate.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Phoxim

TDS Food Item [a]	Phoxim Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Biscuit / Cookie	0.22-0.30	0.44	ND
Bread, raisin	0.27-0.34	0.53	ND
Bun, with savoury filling, baked	0.090-0.17	0.18	ND
Deep-fried dough, Chinese style	0.25	0.31	0.19
Noodles, Chinese / Japanese style	0.41-0.48	0.81	ND
Vegetables and their products			
Bamboo fungus	0.81	0.86	0.76
Chinese kale	0.80-0.88	1.6	ND
Fruits			
Durian	0.39-0.47	0.78	ND
Longan / Lychee	0.085-0.16	0.17	ND
Meat, poultry and game and their products			
Meat ball	0.16-0.23	ND	0.31
Fish and seafood and their products			
Fish ball / fish cake	0.26-0.34	0.52	ND
Fish, Dace, minced	18	23	13
Fish, Grass carp	15	3.5	27
Fish, Mandarin fish	0.27-0.35	0.54	ND
Mixed dishes			
Dim sum, Siu Mai, steamed	0.30	0.17	0.43
Dumpling / spring roll, fried	0.30-0.37	0.59	ND
Dumpling, boiled (including wonton)	0.19-0.26	ND	0.37
Dumpling, steamed	0.32-0.40	0.64	ND
Hamburger	0.18-0.26	0.36	ND
Condiments, sauces and herbs			
Chinese parsley	1.6-1.7	3.2	ND
Sesame seed oil	180	180	170

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Pirimiphos methyl

TDS Food Item [a]	Pirimiphos Methyl Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Biscuit / Cookie	0.40-0.47	ND	0.79
Breakfast cereals	0.12-0.19	ND	0.23
Bun, with savoury filling, baked	0.10-0.18	ND	0.20
Bun, with savoury filling, steamed	0.23-0.30	0.45	ND
Bun, with sweet filling, steamed	0.085-0.16	0.17	ND
Noodles, Chinese / Japanese style	0.17-0.25	0.34	ND
Noodles, instant	0.53	0.67	0.39
Oats / Oatmeal	0.85-0.93	1.7	ND
Pasta, Western style	0.70	0.92	0.48
Pastries, Chinese style	0.47	0.35	0.59
Pie / Tart	0.54	0.65	0.42
Legumes, nuts and seeds and their products			
Tree nuts	0.30-0.37	0.59	ND
Meat, poultry and game and their products			
Pork chop	0.075-0.15	0.15	ND
Mixed dishes			
Dim sum, beef ball, steamed	0.55-0.63	ND	1.1
Dumpling / spring roll, fried	0.085-0.16	0.17	ND
Dumpling, boiled (including wonton)	0.39-0.47	0.78	ND
Dumpling, steamed	0.34	0.51	0.16
Hamburger	0.19	0.16	0.21
Pizza	1.1	2.0	0.25
Sugars and confectionery			
Chocolate	0.18	0.21	0.15
Condiments, sauces and herbs			
Curry sauce	0.50	0.34	0.65

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Profenofos

TDS Food Item [a]	Profenofos Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Bitter melon	0.41-0.49	ND	0.82
Blanching chives	4.7	8.7	0.74
Chinese kale	0.65-0.73	1.3	ND
Peppers (sweet pepper / chili pepper)	1.4-1.5	2.8	ND
Preserved vegetables	0.35	0.16	0.54
Watercress	1.2	1.1	1.2
Legumes, nuts and seeds and their products			
Green string beans (with pod)	13	3.2	22
Mixed dishes			
Pizza	1.7-1.7	3.3	ND
Condiments, sauces and herbs			
Chinese parsley	23	45	0.27
Curry sauce	7.3	6.6	8.0

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Triazophos

TDS Food Item [a]	Triazophos Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fish and seafood and their products			
Clam	0.86	1.3	0.42
Fish, Yellow croaker	0.44	0.17	0.70
Condiments, sauces and herbs			
Chinese parsley	0.33-0.40	ND	0.65
Curry sauce	1.5-1.5	ND	2.9

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Trichlorfon

TDS Food Item [a]	Trichlorfon Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fish and seafood and their products			
Fish, Dace, minced	0.65-0.85	ND	1.3
Salted fish	0.60-0.80	1.2	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Part E.3: Carbamates

Carbaryl

TDS Food Item [a]	Carbaryl Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Rice, unpolished	0.29-0.36	0.57	ND
Fats and oils			
Vegetable oil	0.12-0.20	0.24	ND
Condiments, sauces and herbs			
Curry sauce	2.7-2.7	ND	5.3
White pepper	0.44-0.51	0.87	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Carbosulfan

TDS Food Item [a]	Carbosulfan Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Peppers (sweet pepper / chili pepper)	5.0-7.4	ND	10-12
Legumes, nuts and seeds and their products			
Green string beans (with pod)	68-69	140-140	ND
Condiments, sauces and herbs			
Curry sauce	10-12	4.9-6.6	16-18

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating carbosulfan contents, a factor of 10 is applied for converting both the concentrations of its metabolites, carbofuran and 3-hydroxycarbofuran, expressed as carbosulfan.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Fenobucarb (BPMC)

TDS Food Item [a]	Fenobucarb (BPMC) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Bun, with savoury filling, steamed	0.11-0.19	0.22	ND
Vegetables and their products			
Watercress	0.26-0.33	0.51	ND
Legumes, nuts and seeds and their products			
Green string beans (with pod)	0.085-0.16	ND	0.17
Mixed dishes			
Dim sum, beef ball, steamed	0.18-0.26	0.36	ND
Condiments, sauces and herbs			
Chinese parsley	0.14-0.21	0.27	ND
Curry sauce	0.49	0.17	0.81
White pepper	0.77	1.0	0.53

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Isoprocarb

TDS Food Item [a]	Isoprocarb Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Peppers (sweet pepper / chili pepper)	17	6.4	27
Preserved vegetables	0.55-0.75	1.1	ND
Mixed dishes			
Dim sum, beef ball, steamed	0.35-0.55	ND	0.70
Condiments, sauces and herbs			
White pepper	1.2-1.4	ND	2.3

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Methomyl

TDS Food Item [a]	Methomyl Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	1.8-2.0	ND	3.5-3.6
Sponge gourd	2.9-3.1	5.8-5.9	ND
Fruits			
Apple	0.43-0.64	ND	0.86-1.0
Longan / Lychee	1.0-1.2	1.9-2.0	ND
Melon	0.090-0.30	0.18-0.32	ND
Peach	14-14	ND	27-27
Beverages, non-alcoholic			
Fruit and / or vegetable juice	0.34-0.55	0.67-0.81	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating methomyl contents, a factor of 0.915 is applied for converting the concentration of its metabolite, thiodicarb, expressed as methomyl.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Oxamyl

TDS Food Item [a]	Oxamyl Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Lettuce, Chinese / European / Indian	3.2-3.4	ND	6.3
Mixed dishes			
Pizza	1.1-1.3	ND	2.2

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Pirimicarb

TDS Food Item [a]	Pirimicarb Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Sugars and confectionery			
Jam	0.14-1.1	0.27-1.1	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating pirimicarb contents, factors of 1.063 and 0.945 are applied for converting the concentrations of its metabolites, pirimicarb-desmethyl and pirimicarb-desmethyl-formamido, respectively, expressed as pirimicarb (plant commodities only).

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Propamocarb

TDS Food Item [a]	Propamocarb Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Bread, raisin	0.17-0.24	ND	0.33
Bun, with savoury filling, steamed	0.20	0.16	0.24
Vegetables and their products			
Beet root	0.13-0.20	0.25	ND
Bitter melon	92	170	14
Blanching chives	0.83	0.46	1.2
Broccoli / Cauliflower	0.50-0.58	1.0	ND
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	2.5	2.1	2.9
Cabbage, Chinese flowering	8.3	16	0.62
Cabbage, Pak-choi Chinese	0.080-0.16	0.16	ND
Chinese amaranth (Chinese spinach)	850	0.32	1700
Chinese kale	53	14	92
Cucumber	56	51	61
Eggplant	32	64	0.85
Garlic	0.16-0.23	ND	0.31
Hairy gourd / wax gourd	0.20	0.21	0.19
Leaf mustard	130	59	210
Lettuce, Chinese / European / Indian	35	0.70	69
Mushroom, button	0.080-0.16	ND	0.16
Onion	0.43-0.51	0.86	ND
Pea shoots	1.7	0.60	2.8
Peppers (sweet pepper / chili pepper)	15	9.3	21
Potato	1.6	1.2	1.9
Potato, fried	1.5	1.6	1.3
Preserved vegetables	6.1	5.2	6.9
Pumpkin	17-17	34	ND
Spinach	170	37	300

TDS Food Item [a]	Propamocarb Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Sponge gourd	170	89	260
Spring onion	500	140	850
Sweet potato	0.90-0.98	ND	1.8
Tomato	7.3	0.69	14
Water spinach	0.89	1.4	0.38
Zucchini	0.75-0.83	1.5	ND
Legumes, nuts and seeds and their products			
Green string beans (with pod)	15	29	0.19
Red bean	0.40-0.48	ND	0.80
Fruits			
Grapes	50-50	100	ND
Mango	0.13-0.21	0.26	ND
Papaya	11	22	0.22
Beverages, non-alcoholic			
Tea, chrysanthemum	3.3	6.3	0.36
Mixed dishes			
Dim sum, beef ball, steamed	7.5	6.7	8.3
Dim sum, Siu Mai, steamed	0.14-0.21	ND	0.27
Dumpling / spring roll, fried	1.2	1.2	1.1
Dumpling, boiled (including wonton)	0.19-0.27	ND	0.38
Dumpling, steamed	8.6	16	1.1
Hamburger	0.59	0.17	1.0
Pizza	0.90	0.30	1.5
Soup, Chinese style	0.16-0.24	ND	0.32
Soup, Western style	0.48	0.45	0.51
Turnip cake	0.18-0.25	ND	0.35
Snacks			
Potato chips	0.31	0.24	0.37
Sugars and confectionery			
Jam	0.080-0.16	0.16	ND
Condiments, sauces and herbs			
Chinese parsley	33	60	6.3
Curry sauce	76	1.6	150
Salad dressing	0.11-0.19	ND	0.22
Tomato paste / ketchup	5.2	0.39	10
White pepper	0.27	0.28	0.26

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Part E.4: Dithiocarbamate (DTC) metabolites

N,N'-Dimethylthiourea (DMTU)

TDS Food Item [a]	N,N'-Dimethylthiourea (DMTU) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fish and seafood and their products			
Scallop	0.60-0.80	ND	1.2
Shrimp / Prawn, dried	0.22-0.42	0.43	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Ethylene thiourea (ETU)

TDS Food Item [a]	Ethylene Thiourea (ETU) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Bitter melon	2.9-3.3	ND	5.8
Celery	1.7-2.0	3.3	ND
Chinese amaranth (Chinese spinach)	16-16	31	ND
Chinese kale	49	91	7.7
Leaf mustard	13-13	ND	26
Mushroom, shiitake, dried	5.0-5.4	ND	10
Pea shoots	41	5.9	76
Potato	0.75-1.1	ND	1.5
Potato, fried	2.1	2.5	1.7
Pumpkin	2.2	3.4	1.0
Spinach	59	72	46
Spring onion	44	21	67
Watercress	65	9.8	120
Legumes, nuts and seeds and their products			
Green string beans (with pod)	1.7-2.0	3.3	ND
Fruits			
Papaya	2.1-2.5	ND	4.2
Mixed dishes			
Dim sum, beef ball, steamed	9.0	6.0	12
Dim sum, Siu Mai, steamed	1.6-1.9	3.1	ND
Dumpling / spring roll, fried	1.7-2.1	3.4	ND
Snacks			
Potato chips	7.2	11	3.4
Condiments, sauces and herbs			
Curry sauce	15	15	15
Tomato paste / ketchup	1.2-1.6	2.4	ND

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Propylene thiourea (PTU)

TDS Food Item [a]	Propylene Thiourea (PTU) Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Cucumber	0.90-1.3	1.8	ND
Lettuce, Chinese / European / Indian	0.55-0.93	1.1	ND
Fruits			
Mandarin / Tangerine	0.40-0.77	ND	0.79
Papaya	0.70-1.1	1.4	ND
Pear	1.0-1.4	ND	2.0

Notes
a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.
b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).
c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Part E.5: Other pesticides

Ametoctradin

TDS Food Item [a]	Ametoctradin Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Bun, with savoury filling, steamed	8.5-11	17-20	ND
Vegetables and their products			
Broccoli / Cauliflower	0.19-0.26	0.37	ND
Cabbage, Chinese flowering	0.24	0.27	0.20
Cabbage, Pak-choi Chinese	9.0-9.1	ND	18
Chinese amaranth (Chinese spinach)	0.17	0.17	0.17
Chinese kale	0.24-0.32	ND	0.48
Ginger	0.10-0.18	ND	0.20
Leaf mustard	0.11-0.18	ND	0.21
Lettuce, Chinese / European / Indian	0.32-0.40	ND	0.64
Pea shoots	0.16-0.23	0.31	ND
Spinach	290	570	0.21
Spring onion	24	47	1.2
Tomato	0.10-0.18	0.20	ND
Water spinach	0.43	0.53	0.33
Legumes, nuts and seeds and their products			
Tree nuts	0.08-0.16	ND	0.16
Beverages, alcoholic			
Beer	0.38	0.16	0.59
Wine, red / white	0.95	1.5	0.39
Mixed dishes			
Dim sum, beef ball, steamed	2.4-5.2	ND	4.8-7.6
Dumpling, steamed	0.42-3.3	ND	0.83-3.6
Condiments, sauces and herbs			
Chinese parsley	0.10-0.18	0.20	ND
Curry sauce	0.34-3.2	ND	0.68-3.4
Tomato paste / ketchup	1.1-1.2	ND	2.2
Vinegar	0.20-0.28	0.40	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating ametoctradin contents, factors of 0.964 and 0.878 are applied for converting the concentrations of its metabolites, 4-(7-Amino-5-ethyl[1,2,4]triazolo[1,5-a]pyrimidin-6-yl)butanoic acid or omega-hetarylbutanoic acid (M650F01), and 6-(7-Amino-5-ethyl[1,2,4]triazolo[1,5-a]pyrimidin-6-yl)hexanoic acid or omega-hetarylhexanoic acid (M650F06), respectively, expressed as ametoctradin (animal commodities only).

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Bixafen

TDS Food Item [a]	Bixafen Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Fats and oils			
Vegetable oil	0.10-0.33	0.20-0.36	ND
Condiments, sauces and herbs			
Salad dressing	0.24-0.39	0.15-0.31	0.32-0.48

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating bixafen contents, a factor of 1.035 is applied for converting the concentration of its metabolite, bixafen desmethyl, expressed as bixafen.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Cyantraniliprole

TDS Food Item [a]	Cyantraniliprole Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Eggplant	0.29-0.36	0.57	ND
Lettuce, Chinese / European / Indian	0.32-0.39	ND	0.63
Peppers (sweet pepper / chili pepper)	0.57	0.26	0.87
Fruits			
Apple	0.10-0.17	0.19	ND
Cherry	1.0	0.96	1.1
Orange	0.27-0.35	ND	0.54
Condiments, sauces and herbs			
Chinese parsley	0.11-0.19	0.22	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Cyazofamid

TDS Food Item [a]	Cyazofamid Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Bitter melon	0.32-0.99	ND	0.63-1.2
Cabbage, Chinese flowering	0.08-0.75	ND	0.15-0.75
Cabbage, Pak-choi Chinese	3.5	3.6	3.3
Chinese amaranth (Chinese spinach)	0.24-0.91	ND	0.48-1.1
Chinese kale	39	23	55
Cucumber	0.35-0.95	0.26-0.86	0.44-1.0
Leaf mustard	20-21	ND	40
Lettuce, Chinese / European / Indian	73	84	61
Pea shoots	19-19	ND	38
Spinach	55	85	26
Spring onion	18-18	ND	36
Water spinach	0.44-1.0	0.68-1.3	0.19-0.79
Mixed dishes			
Dim sum, beef ball, steamed	1.2-1.5	ND	2.3
Dumpling, steamed	0.70-1.4	ND	1.4-2.0
Hamburger	1.0-1.7	ND	2.0-2.6
Pizza	0.32-0.99	ND	0.63-1.2
Condiments, sauces and herbs			
Chinese parsley	2.3-2.9	0.98-1.6	3.7-4.3

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating cyazofamid contents, a factor of 1.492 is applied for converting the concentration of its metabolite, 4-chloro-5-p-tolylimidazole-2-carbonitrile (CCIM), expressed as cyazofamid.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Cyflumetofen

TDS Food Item [a]	Cyflumetofen Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Vegetables and their products			
Peppers (sweet pepper / chili pepper)	0.08-9.6	ND	0.16-9.6
Legumes, nuts and seeds and their products			
Peanut	14-19	28-28	ND
Peanut butter	100-100	120-120	75-75

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results

less than limit of detection (LOD).

c For calculating cyflumetofen contents, a factor of 2.354 is applied for converting the concentration of its metabolite, 2-(trifluoromethyl)benzoic acid, expressed as cyflumetofen.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Ethephon

TDS Food Item [a]	Ethephon Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Blanching chives	6.0-8.0	ND	12
Pea shoots	65-67	ND	130
Peppers (sweet pepper / chili pepper)	18-20	ND	35
Tomato	17-19	ND	33
Fruits			
Banana	81-81	98	64
Dried fruits	2.0-4.0	4.0	ND
Durian	23-23	27	18
Grapes	120-120	14	230
Papaya	34-34	47	21
Pineapple	3.0-5.0	ND	6.0
Beverages, alcoholic			
Wine, red / white	2.2-4.2	4.4	ND
Condiments, sauces and herbs			
Tomato paste / ketchup	2.7-4.7	5.4	ND

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Fenazaquin

TDS Food Item [a]	Fenazaquin Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fruits			
Durian	0.19-0.26	0.37	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Fenpyrazamine

TDS Food Item [a]	Fenpyrazamine Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fruits			
Grapes	0.17-0.24	0.33	ND
Beverages, alcoholic			
Wine, red / white	0.34	0.18	0.50
Sugars and confectionery			
Jam	0.37-0.44	0.73	ND

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Fipronil

TDS Food Item [a]	Fipronil Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Bun, with sweet filling, steamed	0.18-1.3	0.35-1.4	ND
Vegetables and their products			
Beet root	0.46-1.3	0.92-1.4	ND
Chinese amaranth (Chinese spinach)	0.11-1.3	ND	0.22-1.3
Peppers (sweet pepper / chili pepper)	0.67-1.5	1.3-1.8	ND
Spinach	8.8-9.7	11-12	6.4-7.4
Sweet potato	0.21-1.4	0.41-1.5	ND
Watercress	2.0-3.1	4.0-5.1	ND
Meat, poultry and game and their products			
Beef	0.16-1.3	ND	0.32-1.4
Chicken meat, other than chicken wing	0.07-1.2	0.14-1.2	ND
Chicken wing	0.08-1.2	ND	0.15-1.3
Meat ball	0.15-1.3	0.31-1.4	ND
Pork chop	0.39-1.6	ND	0.77-1.9
Pork ribs	0.21-1.3	0.19-1.3	0.22-1.3
Egg and their products			
Egg, chicken	0.29-1.4	0.39-1.5	0.20-1.3
Fish and seafood and their products			
Fish, Grass carp	0.12-1.3	0.23-1.3	ND
Fish, Mandarin fish	0.10-1.3	ND	0.19-1.3
Fish, Mangrove red snapper	0.11-1.3	0.21-1.3	ND
Fish, Yellow croaker	0.41-1.5	0.55-1.6	0.28-1.4
Dairy products			
Milk beverages	0.08-1.2	ND	0.15-1.3
Milk, whole	0.42-1.5	ND	0.85-1.8
Fats and oils			
Butter	0.14-1.3	0.29-1.4	ND

TDS Food Item [a]	Fipronil Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Beverages, non-alcoholic			
Coffee	1.5-2.5	1.5-2.5	1.5-2.4
Mixed dishes			
Dim sum, beef ball, steamed	0.18-1.3	0.19-1.3	0.16-1.3
Snacks			
Potato chips	0.09-1.3	ND	0.18-1.3
Condiments, sauces and herbs			
Chinese parsley	1.6-2.7	3.3-4.2	ND
Curry sauce	6.6-7.4	2.0-2.8	11-12

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating fipronil contents, factors of 1.123, 0.965 and 1.038 are applied for converting the concentration of its metabolites, fipronil desulfinyl, fipronil sulfone and fipronil thioether, respectively, expressed as fipronil.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Fluxapyroxad

TDS Food Item [a]	Fluxapyroxad Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Bitter melon	0.13-0.21	0.26	ND
Broccoli / Cauliflower	0.30-0.37	ND	0.59
Cucumber	0.78	0.26	1.3
Hairy gourd / wax gourd	0.22	0.18	0.25
Lettuce, Chinese / European / Indian	2.3-2.3	ND	4.5
Onion	0.18-0.25	ND	0.35
Pea shoots	0.08-0.15	ND	0.15
Peppers (sweet pepper / chili pepper)	2.4-2.4	ND	4.7
Potato, fried	0.19	0.17	0.20
Spring onion	130	0.85	250
Tomato	0.17-0.25	0.34	ND
Water spinach	0.17-0.24	0.33	ND
Legumes, nuts and seeds and their products			
Green string beans (with pod)	0.48-0.56	0.96	ND
Tree nuts	0.28	0.41	0.15
Fruits			
Apple	0.16-0.23	ND	0.31
Banana	4.5	2.5	6.4
Cherry	9.5-9.6	19	ND
Dried fruits	0.09-0.17	0.18	ND
Grapes	11	9.5	12

TDS Food Item [a]	Fluxapyroxad Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Mango	1.6-1.6	3.1	ND
Melon	0.08-0.15	0.15	ND
Papaya	3.5-3.6	7.0	ND
Peach	0.55-0.63	1.1	ND
Pear	0.28-0.35	0.55	ND
Fats and oils			
Vegetable oil	0.20	0.24	0.15
Beverages, non-alcoholic			
Fruit and / or vegetable juice	0.11-0.18	0.21	ND
Mixed dishes			
Dim sum, beef ball, steamed	0.50-0.58	ND	1.0
Dumpling, steamed	1.3-1.4	ND	2.6
Sugars and confectionery			
Jam	0.13-0.20	0.25	ND
Condiments, sauces and herbs			
Tomato paste / ketchup	1.3	1.1	1.4
Vinegar	0.37	0.37	0.36

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Fosetyl aluminium

TDS Food Item [a]	Fosetyl Aluminium Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Biscuit / Cookie	94-96	100-100	87-90
Bread, plain	110-110	92-95	130-130
Bread, raisin	97-100	120-120	74-77
Breakfast cereals	74-77	62-65	86-89
Bun, with savoury filling, baked	110-110	76-79	140-140
Bun, with savoury filling, steamed	160-160	190-190	120-120
Bun, with sweet filling, steamed	250-250	100-100	400-400
Cake	140-140	77-80	200-200
Corn	46-68	91-94	ND
Deep-fried dough, Chinese style	390-390	550-550	220-220
Pasta, Western style	39-62	78-81	ND
Pastries, Chinese style	190-190	76-79	300-300
Pie / Tart	97-100	84-87	110-110
Pineapple bun	280-280	98-100	460-460
Rice, unpolished	93-96	110-110	76-79
Rice, white	230-230	210-210	250-250
Vegetables and their products			
Bamboo fungus	37-59	ND	73-76

TDS Food Item [a]	Fosetyl Aluminium Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Bamboo shoot	20-43	40-43	ND
Beet root	79-82	60-63	98-100
Bitter melon	54-56	48-51	59-62
Blanching chives	400-400	82-85	720-720
Broccoli / Cauliflower	21-43	ND	41-44
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	60-83	ND	120-120
Cabbage, Chinese flowering	31-54	ND	62-65
Cabbage, Pak-choi Chinese, dried	29-52	58-61	ND
Carrot / Radish	75-98	ND	150-150
Celery	40-63	ND	80-83
Chinese amaranth (Chinese spinach)	27-50	54-57	ND
Cucumber	220-220	51-54	380-380
Eggplant	800-820	1,600-1,600	ND
Garlic	59-62	71-74	47-50
Ginger	46-69	92-95	ND
Hairy gourd / wax gourd	87-90	81-84	93-96
Lettuce, Chinese / European / Indian	44-66	ND	87-90
Mushroom, button	100-100	120-120	82-85
Mushroom, shiitake, dried	69-71	72-75	65-68
Onion	3,000-3,000	5,300-5,300	790-790
Pea shoots	62-64	56-59	67-70
Peppers (sweet pepper / chili pepper)	97-100	130-130	64-67
Potato	450-460	850-850	58-61
Potato, fried	840-840	970-970	710-710
Seaweed	97-100	84-87	110-110
Spinach	210-210	120-120	290-290
Spring onion	550-550	220-220	870-870
Sweet potato	130-130	43-46	210-210
Tomato	130-130	140-140	110-110
Water spinach	43-65	85-88	ND
Zucchini	160-180	ND	310-310
Legumes, nuts and seeds and their products			
Fermented soybean products	370-370	320-320	420-420
Green peas	87-89	130-130	43-46
Green string beans (with pod)	32-55	64-67	ND
Peanut	440-440	420-420	450-450
Peanut butter	390-390	330-330	440-440
Red bean	94-96	120-120	67-70
Soybean curd (Tofu)	22-44	ND	43-46
Tree nuts	7,100-7,100	8,300-8,300	5,800-5,800
Fruits			
Apple	740-740	730-730	750-750
Banana	90-92	49-52	130-130
Cherry	580-580	940-940	220-220
Dragon fruit	22-44	43-46	ND
Dried fruits	200-200	57-60	340-340
Durian	13,000-13,000	20,000-20,000	6,700-6,700
Grapes	810-810	1,400-1,400	220-220
Kiwi	420-440	840-840	ND
Longan / Lychee	140-140	210-210	73-76
Mandarin / Tangerine	260-260	230-230	290-290

TDS Food Item [a]	Fosetyl Aluminium Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Mango	180-180	290-290	63-66
Melon	36-59	ND	72-75
Orange	1,100-1,100	940-940	1,300-1,300
Papaya	61-63	77-80	44-47
Peach	1,000-1,000	160-160	1,900-1,900
Pear	70-72	48-51	91-94
Pineapple	1,200-1,200	1,800-1,800	660-660
Meat, poultry and game and their products			
Beef	190	210	160
Beef tendon	360	380	330
Chicken meat, other than chicken wing	94	77	110
Chicken wing	93	110	76
Duck / goose, roasted	150	210	80
Ham, pork	58-61	72-75	44-47
Liver, goose	100	140	63
Liver, pig	200	220	180
Luncheon meat	150-150	240-240	56-59
Meat ball	100-110	110-110	97-100
Meat sausage	27-50	ND	54-57
Mutton	310	400	210
Pork chop	130	140	110
Pork ribs	140	140	130
Pork, barbequed	51	58	44
Pork, other than pork chop and pork ribs	140	130	150
Pork, roasted	120	150	82
Egg and their products			
Egg, chicken	340	320	350
Egg, lime preserved	60	74	45
Egg, salted	150	140	150
Fish and seafood and their products			
Clam	65	68	61
Cuttlefish	46-66	ND	92
Fish ball / fish cake	54-56	47-50	60-63
Fish fillet	220	130	300
Fish, Dace, minced	55-57	64-67	45-48
Fish, Golden thread	77	73	81
Fish, Grass carp	220	150	280
Fish, Grouper	130	160	100
Fish, Mandarin fish	120	130	100
Fish, Mangrove red snapper	50-70	ND	100
Fish, Pomfret / Pompano	60-80	ND	120
Fish, Salmon	130	83	170
Fish, Tuna	88-91	66-69	110-110
Fish, Yellow croaker	170	180	150
Lobster	98	150	45
Mantis shrimp	22-42	ND	44
Mussel	61	65	57
Oyster	96	100	91
Salted fish	240-240	360-360	110-110
Scallop	40	40	40
Shrimp / Prawn	33-53	66	ND

TDS Food Item [a]	Fosetyl Aluminium Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Shrimp / Prawn, dried	26-46	ND	52
Squid	46	45	46
Dairy products			
Cheese	39-59	77	ND
Fermented / Cultured beverages, dairy based	27-49	ND	53-56
Ice-cream	330-330	370-370	280-280
Milk beverages	190-190	100-100	270-270
Milk, condensed / evaporated	250-250	190-190	310-310
Milk, skim	53	58	47
Milk, whole	93	120	65
Yoghurt	67-69	51-54	82-85
Fats and oils			
Butter	25-45	49	ND
Beverages, alcoholic			
Beer	76-79	67-70	85-88
Wine, red / white	2400	1300	3500
Beverages, non-alcoholic			
Coffee	180-180	88-91	270-270
Fruit and / or vegetable juice	450-450	400-400	500-500
Malt drink	64-66	57-60	70-73
Soybean drink	110-110	82-85	130-130
Tea (including lemon tea)	60-63	62-65	58-61
Tea, chrysanthemum	22-45	ND	44-47
Tea, with milk	150-150	160-160	140-140
Tea, with milk and tapioca pearls	23-46	46-49	ND
Mixed dishes			
Dim sum, beef ball, steamed	84-86	75-78	92-95
Dim sum, Siu Mai, steamed	130-130	170-170	80-83
Dumpling / spring roll, fried	240-240	350-350	120-120
Dumpling, boiled (including wonton)	54-56	58-61	49-52
Dumpling, steamed	92-95	110-110	74-77
Glutinous rice dumpling	150-150	99-100	200-200
Hamburger	140-140	120-120	150-150
Pizza	89-92	91-94	87-90
Rice-roll, plain, steamed	28-50	55-58	ND
Soup, Chinese style	150-150	180-180	110-110
Soup, Western style	110-120	140-140	88-91
Turnip cake	99-100	68-71	130-130
Snack foods			
Potato chips	2,000-2,000	1,100-1,100	2,900-2,900
Sugars and confectionery			
Chocolate	250-250	240-240	250-250
Jam	270-270	320-320	210-210
Condiments, sauces and herbs			
Chicken powder / cube	65-88	130-130	ND
Chinese parsley	70-93	ND	140-140
Curry sauce	150-150	190-190	110-110
Salad dressing	30-53	60-63	ND
Soy sauce	55-58	57-60	53-56
Tomato paste / ketchup	730-730	760-760	700-700

TDS Food Item [a]	Fosetyl Aluminium Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vinegar	340-340	370-370	310-310
White pepper	120-120	140-140	90-93

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating fosetyl aluminium contents, factors of 1 and 0.743 are applied for converting the concentrations of phosphonic acid and fosetyl (for plant commodities only), respectively, expressed as phosphonic acid.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Glufosinate ammonium

TDS Food Item [a]	Glufosinate Ammonium Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Mushroom, shiitake, dried	9.6-14	8.1-13	11-16
Sweet potato	2.7-10	5.4-11	ND
Legumes, nuts and seeds and their products			
Tree nuts	8.6-14	8.1-13	9.1-14
Fruits			
Banana	18-26	ND	37-42
Cherry	8.3-16	17-22	ND
Dragon fruit	5.5-11	5.8-11	5.2-11
Mandarin / Tangerine	6.0-14	ND	12-17
Papaya	10-16	15-21	5.1-10
Peach	7.7-15	ND	15-21
Fish and seafood and their products			
Clam	98-100	180-180	17-22
Crab	11-18	21-27	ND
Mantis shrimp	28-33	43-48	13-18
Beverages, non-alcoholic			
Fruit and / or vegetable juice	4.9-13	ND	9.8-15
Snack foods			
Potato chips	2.3-10	4.6-11	ND
Condiments, sauces and herbs			
Oyster sauce	3.2-11	ND	6.4-12

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating glufosinate ammonium contents, factors of 1, 1.191 and 0.32 are applied for converting the concentrations of glufosinate, 3-methyl-phosphinico-propionic acid (MPPA), and N-acetyl-glufosinate,

respectively, calculated as glufosinate.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Glyphosate

TDS Food Item [a]	Glyphosate Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Biscuit / Cookie	6.0-25	ND	12-26
Bread, plain	97-100	98-110	96-100
Bread, raisin	72-79	66-74	77-85
Bun, with savoury filling, baked	57-68	48-62	66-73
Bun, with sweet filling, steamed	9.5-28	19-33	ND
Deep-fried dough, Chinese style	44-58	43-57	45-59
Pie / Tart	6.0-25	ND	12-26
Pineapple bun	62-75	61-75	62-76
Vegetables and their products			
Mushroom, button	15-32	13-30	17-34
Legumes, nuts and seeds and their products			
Green peas	17-36	ND	34-48
Peanut butter	5.5-24	11-25	ND
Beverages, non-alcoholic			
Malt drink	18-32	20-34	16-30
Tea, with milk	14-27	13-27	14-28
Mixed dishes			
Dumpling / spring roll, fried	15-28	12-26	17-31
Dumpling, boiled (including wonton)	11-24	11-25	10-24
Dumpling, steamed	12-26	11-25	13-27
Hamburger	31-45	33-47	29-43
Pizza	33-46	33-47	32-46
Condiments, sauces and herbs			
Curry sauce	28-42	10-24	46-60
White pepper	5.0-24	10-24	ND

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating glyphosate contents, factors of 1, 1.523, 1.105 and 0.801 are applied for converting the concentrations of glyphosate, aminomethylphosphonic acid (AMPA), N-acetyl-AMPA, and N-acetyl-glyphosate, respectively, expressed as glyphosate.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Isofetamid

TDS Food Item [a]	Isofetamid Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Cereals and their products			
Bread, raisin	0.72-2.1	0.33-1.7	1.1-2.5
Dairy products			
Ice-cream	0.13-1.6	0.26-1.6	ND
Beverages, non-alcoholic			
Fruit and / or vegetable juice	0.15-0.22	0.29	ND
Sugars and confectionery			
Jam	2.0	3.9	0.19

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating isofetamid contents, a factor of 0.923 is applied for converting the concentration of its metabolite, 2-[3-Methyl-4-[2-methyl-2-(3-methylthiophene-2-carboxamido)propanoyl]phenoxy] propanoic acid (PPA), expressed as isofetamid (animal commodities only).

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Isopyrazam

TDS Food Item [a]	Isopyrazam Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Cabbage, Chinese flowering	0.09-0.16	ND	0.17
Pea shoots	27-27	ND	53
Fruits			
Apple	0.15-0.22	ND	0.29
Grapes	0.26-0.34	ND	0.52

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Lufenuron

TDS Food Item [a]	Lufenuron Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Bread, plain	0.09-0.16	ND	0.17
Vegetables and their products			
Bamboo shoot	0.16-0.23	0.31	ND
Bitter melon	7.0	13	1.0
Blanching chives	0.23-0.31	0.46	ND
Broccoli / Cauliflower	0.55-0.63	1.1	ND
Cabbage, Chinese flowering	0.26	0.36	0.15
Cabbage, Pak-choi Chinese	1.2	0.18	2.2
Cabbage, Pak-choi Chinese, dried	3.6-3.6	ND	7.1
Celery	0.46	0.75	0.17
Chinese amaranth (Chinese spinach)	36	70	1.3
Chinese kale	68	130	5.3
Cucumber	0.70-0.78	ND	1.4
Eggplant	0.24	0.32	0.15
Ginger	0.09-0.17	ND	0.18
Leaf mustard	15	27	3.4
Lettuce, Chinese / European / Indian	0.91	0.41	1.4
Peppers (sweet pepper / chili pepper)	3.4	5.2	1.6
Preserved vegetables	1.0	1.8	0.20
Spinach	6.6	0.29	13
Spring onion	3.2	0.33	6.0
Tomato	1.1	1.8	0.31
Water spinach	28	56	0.25
Watercress	1.2-1.3	ND	2.4
Legumes, nuts and seeds and their products			
Green string beans (with pod)	9.3	17	1.5
Peanut	0.09-0.16	0.17	ND
Fruits			
Grapes	0.20-0.27	ND	0.39
Longan / Lychee	1.4	2.0	0.72
Mandarin / Tangerine	1.9	3.7	0.19
Papaya	0.14-0.22	0.28	ND
Peach	0.17-0.25	0.34	ND
Pear	18	0.17	36
Meat, poultry and game and their products			
Beef	0.26-0.33	0.51	ND
Chicken meat, other than chicken wing	0.09-0.17	0.18	ND
Chicken wing	0.14-0.21	0.27	ND
Duck / goose, roasted	2.8	3.2	2.4
Liver, goose	0.60	0.83	0.37
Meat ball	1.6	2.0	1.1
Mutton	0.49	0.17	0.80
Egg and their products			
Egg, lime preserved	1.0	0.16	1.9
Egg, salted	0.09-0.17	ND	0.18
Fish and seafood and their products			
Fish, Dace, minced	2.0	3.8	0.27

TDS Food Item [a]	Lufenuron Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Fish, Grass carp	6.3	3.8	8.7
Fish, Grouper	0.24	0.31	0.16
Fish, Mandarin fish	15	19	11
Fish, Mangrove red snapper	35	69	0.34
Fish, Pomfret / Pompano	0.10-0.17	ND	0.19
Fish, Salmon	0.45-0.53	ND	0.90
Fish, Yellow croaker	0.16-0.24	ND	0.32
Shrimp / Prawn, dried	0.12-0.19	0.23	ND
Dairy products			
Fermented / Cultured beverages, dairy based	0.90-0.98	1.8	ND
Milk beverages	0.23-0.31	ND	0.46
Milk, condensed / evaporated	0.54	0.46	0.61
Milk, whole	2.5	3.5	1.4
Yoghurt	0.08-0.16	0.16	ND
Beverages, non-alcoholic			
Coffee	2.5	1.4	3.6
Tea, with milk and tapioca pearls	0.23-0.31	ND	0.46
Mixed dishes			
Dim sum, beef ball, steamed	1.3	2.4	0.20
Soup, Western style	0.10-0.18	0.20	ND
Condiments, sauces and herbs			
Chinese parsley	240	470	3.0
Curry sauce	0.24	0.16	0.32

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Maleic hydrazide

TDS Food Item [a]	Maleic Hydrazide Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Onion	1,800-1,800	3,100	500
Potato, fried	1,600-1,600	1,200	1,900
Fish and seafood and their products			
Fish, Tuna	9.5-15	19	ND
Mixed dishes			
Soup, Western style	18-23	ND	36
Snack foods			
Potato chips	3,700-3,700	380	7,000

Notes:

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results

less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Oxathiapiprolin

TDS Food Item [a]	Oxathiapiprolin Contents (μg/kg) [b, c]		
	Mean [d]	1st Sampling Occasion [e]	2nd Sampling Occasion [e]
Vegetables and their products			
Bitter melon	0.24-12	ND	0.48-12
Cucumber	0.15-12	ND	0.30-12
Lettuce, Chinese / European / Indian	2.5-15	ND	5.0-17
Spinach	29-41	58-70	0.28-12
Spring onion	19-31	0.77-13	38-50
Mixed dishes			
Hamburger	0.20-12	ND	0.39-12
Condiments, sauces and herbs			
Chinese parsley	0.08-12	ND	0.16-12

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c For calculating oxathiapiprolin contents, a factor of 2.996 is applied for converting the concentration of its metabolite, 5-(trifluoromethyl)-1H-pyrazole-3-carboxylic acid (IN-E8S72), expressed as oxathiapiprolin.

d Mean concentrations for those TDS food items detected with all analytes in both sampling occasions are presented as a single value, whereas those detected with some analytes and/or only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

e Levels in composite samples detected with all analytes are presented as a single value, whereas those detected with some analytes are presented as a range (LB-UB).

Pyraclostrobin

TDS Food Item [a]	Pyraclostrobin Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Cereals and their products			
Bread, raisin	0.63	0.65	0.61
Bun, with savoury filling, steamed	0.29	0.37	0.21
Vegetables and their products			
Bamboo fungus	0.41	0.43	0.38
Bamboo shoot	0.15-0.23	ND	0.30
Bitter melon	8.5	8.7	8.2
Blanching chives	10	16	4.6
Broccoli / Cauliflower	1.2	0.74	1.7
Cabbage, Chinese (including Pe-tsai / Celery cabbage)	0.75-0.83	ND	1.5
Cabbage, Chinese flowering	210	2.4	420
Cabbage, Pak-choi Chinese	0.40-0.47	0.79	ND
Cabbage, Pak-choi Chinese, dried	0.51	0.28	0.73
Carrot / Radish	0.22-0.29	ND	0.43
Celery	14	4.1	24

TDS Food Item [a]	Pyraclostrobin Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Chinese amaranth (Chinese spinach)	29	55	3.3
Chinese kale	15-15	30	ND
Cucumber	0.20	0.18	0.21
Eggplant	16	31	0.67
Hairy gourd / wax gourd	0.63	0.77	0.49
Leaf mustard	11	0.27	21
Lettuce, Chinese / European / Indian	55	0.29	110
Mushroom, button	0.13-0.20	ND	0.25
Pea shoots	65	9.3	120
Peppers (sweet pepper / chili pepper)	30	6.8	53
Preserved vegetables	0.81	0.22	1.4
Spinach	42	14	70
Sponge gourd	1.8	2.8	0.86
Spring onion	310	56	570
Tomato	0.60	0.51	0.68
Water spinach	4.2	4.0	4.4
Watercress	65	99	31
Zucchini	0.66	1.1	0.22
Legumes, nuts and seeds and their products			
Green string beans (with pod)	18	9.6	26
Peanut	0.39-0.46	0.77	ND
Vermicelli, mung bean	0.09-0.16	ND	0.17
Fruits			
Apple	0.65	0.89	0.41
Banana	0.39	0.19	0.59
Cherry	14-14	28	ND
Grapes	8.4	8.4	8.4
Longan / Lychee	3.2	4.7	1.7
Mandarin / Tangerine	0.22-0.30	0.44	ND
Mango	1.6	3.1	0.16
Papaya	1.3-1.3	2.5	ND
Peach	0.27-0.34	0.53	ND
Pear	4.7-4.7	ND	9.3
Watermelon	0.20-0.27	0.39	ND
Meat, poultry and game and their products			
Luncheon meat	0.09-0.16	ND	0.17
Mutton	0.28-0.36	ND	0.56
Pork chop	0.30-0.37	ND	0.59
Fish and seafood and their products			
Fish, Golden thread	0.13-0.20	ND	0.25
Fats and oils			
Vegetable oil	0.08-0.15	0.15	ND
Beverages, non-alcoholic			
Fruit and / or vegetable juice	0.26	0.26	0.25
Mixed dishes			
Dim sum, beef ball, steamed	2.9	1.2	4.6
Dumpling / spring roll, fried	0.36	0.43	0.28
Dumpling, steamed	9.2	5.3	13
Hamburger	0.24	0.27	0.20
Pizza	0.35-0.42	ND	0.69

TDS Food Item [a]	Pyraclostrobin Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Turnip cake	0.11-0.19	0.22	ND
Snacks			
Potato chips	0.10-0.17	ND	0.19
Sugars and confectionery			
Jam	0.09-0.17	0.18	ND
Condiments, sauces and herbs			
Chinese parsley	15	3.8	27
Curry sauce	1.6	1.4	1.8

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Pyriproxyfen

TDS Food Item [a]	Pyriproxyfen Contents (μg/kg) [b]		
	Mean [c]	1st Sampling Occasion	2nd Sampling Occasion
Vegetables and their products			
Celery	0.20-0.28	0.40	ND
Eggplant	8.8	17	0.58
Leaf mustard	0.15-0.22	0.29	ND
Peppers (sweet pepper / chili pepper)	0.75-0.83	ND	1.5
Spring onion	0.24-0.32	ND	0.48
Tomato	0.65-0.73	ND	1.3
Legumes, nuts and seeds and their products			
Green string beans (with pod)	0.15-0.23	0.30	ND
Fruits			
Grapes	0.28-0.36	0.56	ND
Longan / Lychee	0.18-0.25	ND	0.35
Mixed dishes			
Dim sum, beef ball, steamed	0.080-0.16	0.16	ND
Dumpling / spring roll, fried	0.26-0.34	0.52	ND
Condiments, sauces and herbs			
Chinese parsley	14	28	0.26
Curry sauce	0.39	0.27	0.51

Notes

a Only TDS Food Items with detectable levels in the composite sample(s) are listed. Two composite samples were tested for each TDS food item.

b Concentration levels have been rounded to two significant figures. ND denotes non-detected, i.e. results less than limit of detection (LOD).

c Mean concentrations for those TDS food items detected in both sampling occasions are presented as a single value, whereas those detected only in one of the two sampling occasions are presented as a range (lower bound (LB)-upper bound (UB)).

Appendix F

Estimates of dietary exposure to pesticide or metabolite residues detected for average and high consumers among age-gender subgroups and their contribution to the health-based guidance values (HBGVs)

Table F.1: Adult population

		Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)											
	Age-gender groups	Aged 18-49			Aged 50-64			Aged 65 or above			Aged 18 or above		
		All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Neonicotinoids (Neonics)													
Acetamiprid (ACE)	Average consumers	0.073-0.078 (0.10-0.11%)	0.066-0.070 (0.094-0.10%)	0.080-0.084 (0.11-0.12%)	0.097-0.10 (0.14-0.15%)	0.092-0.097 (0.13-0.14%)	0.10-0.11 (0.15-0.15%)	0.11-0.11 (0.16-0.16%)	0.10-0.11 (0.15-0.15%)	0.12-0.12 (0.17-0.17%)	0.088-0.092 (0.13-0.13%)	0.082-0.086 (0.12-0.12%)	0.094-0.098 (0.13-0.14%)
	High consumers	0.19-0.19 (0.27-0.27%)	0.16-0.17 (0.24-0.24%)	0.21-0.21 (0.29-0.30%)	0.23-0.24 (0.33-0.34%)	0.21-0.22 (0.30-0.31%)	0.24-0.25 (0.35-0.35%)	0.26-0.26 (0.37-0.37%)	0.24-0.24 (0.34-0.35%)	0.26-0.27 (0.38-0.38%)	0.21-0.22 (0.30-0.31%)	0.20-0.20 (0.28-0.28%)	0.23-0.23 (0.32-0.33%)
Clothianidin (CLO)	Average consumers	0.030-0.033 (0%)	0.021-0.024 (0%)	0.038-0.041 (0%)	0.033-0.036 (0%)	0.026-0.030 (0%)	0.039-0.042 (0%)	0.036-0.039 (0%)	0.027-0.031 (0%)	0.044-0.047 (0%)	0.032-0.035 (0%)	0.024-0.027 (0%)	0.039-0.043 (0%)
	High consumers	0.048-0.052 (0-0.052%)	0.037-0.042 (0%)	0.060-0.064 (0.060-0.064%)	0.052-0.055 (0.052-0.055%)	0.044-0.049 (0%)	0.062-0.066 (0.062-0.066%)	0.049-0.053 (0-0.053%)	0.045-0.050 (0-0.050%)	0.057-0.061 (0.057-0.061%)	0.050-0.053 (0.050-0.053%)	0.041-0.045 (0%)	0.060-0.063 (0.060-0.063%)
Dinotefuran (DIN)	Average consumers	0.037-0.068 (0%)	0.035-0.066 (0%)	0.038-0.070 (0%)	0.041-0.072 (0%)	0.040-0.071 (0%)	0.042-0.072 (0%)	0.042-0.070 (0%)	0.045-0.073 (0%)	0.039-0.066 (0%)	0.039-0.069 (0%)	0.039-0.069 (0%)	0.039-0.070 (0%)
	High consumers	0.077-0.11 (0-0.057%)	0.075-0.11 (0-0.055%)	0.083-0.12 (0-0.059%)	0.086-0.12 (0-0.062%)	0.087-0.12 (0-0.061%)	0.082-0.12 (0-0.062%)	0.086-0.12 (0-0.060%)	0.090-0.13 (0-0.063%)	0.080-0.12 (0-0.058%)	0.082-0.12 (0-0.059%)	0.082-0.12 (0-0.058%)	0.082-0.12 (0-0.060%)
Flupyradifurone (FLU)	Average consumers	0.031-0.10 (0-0.13%)	0.023-0.093 (0-0.12%)	0.039-0.11 (0-0.14%)	0.029-0.10 (0-0.13%)	0.025-0.099 (0-0.12%)	0.033-0.11 (0-0.13%)	0.029-0.098 (0-0.12%)	0.026-0.098 (0-0.12%)	0.032-0.097 (0-0.12%)	0.030-0.10 (0-0.13%)	0.024-0.096 (0-0.12%)	0.036-0.11 (0-0.13%)
	High consumers	0.063-0.15 (0.079-0.19%)	0.045-0.13 (0.056-0.17%)	0.085-0.17 (0.11-0.21%)	0.062-0.16 (0.077-0.20%)	0.049-0.15 (0.061-0.19%)	0.078-0.16 (0.097-0.21%)	0.056-0.15 (0.070-0.19%)	0.051-0.16 (0.064-0.19%)	0.060-0.15 (0.075-0.18%)	0.061-0.15 (0.076-0.19%)	0.048-0.14 (0.060-0.18%)	0.077-0.16 (0.096-0.21%)
Imidacloprid (IMI)	Average consumers	0.046-0.12 (0.092-0.24%)	0.034-0.11 (0.068-0.21%)	0.056-0.13 (0.11-0.26%)	0.047-0.12 (0.094-0.24%)	0.040-0.11 (0.081-0.23%)	0.053-0.12 (0.11-0.25%)	0.047-0.11 (0.094-0.23%)	0.042-0.11 (0.084-0.22%)	0.052-0.12 (0.10-0.23%)	0.046-0.12 (0.093-0.24%)	0.038-0.11 (0.075-0.22%)	0.054-0.12 (0.11-0.25%)
	High consumers	0.096-0.18 (0.19-0.37%)	0.074-0.16 (0.15-0.31%)	0.12-0.21 (0.25-0.42%)	0.093-0.18 (0.19-0.37%)	0.078-0.18 (0.16-0.35%)	0.11-0.20 (0.22-0.40%)	0.094-0.18 (0.19-0.36%)	0.087-0.18 (0.17-0.36%)	0.11-0.19 (0.21-0.37%)	0.095-0.18 (0.19-0.37%)	0.077-0.17 (0.15-0.34%)	0.12-0.20 (0.24-0.40%)
Imidaclothiz (IMID)	Average consumers	0-0.0045 (0%)	0-0.0044 (0%)	0-0.0046 (0%)	0-0.0046 (0%)	0-0.0046 (0%)	0-0.0046 (0%)	0-0.0043 (0%)	0-0.0045 (0%)	0-0.0042 (0%)	0-0.0045 (0%)	0-0.0045 (0%)	0-0.0045 (0%)
	High consumers	0-0.0063 (0%)	0-0.0061 (0%)	0-0.0065 (0%)	0-0.0066 (0%)	0-0.0066 (0%)	0-0.0066 (0%)	0-0.0063 (0%)	0-0.0065 (0%)	0-0.0062 (0%)	0-0.0064 (0%)	0-0.0064 (0%)	0-0.0065 (0%)
Nitenpyram (NIT)	Average consumers	0.0017-0.013 (0%)	0.0015-0.013 (0%)	0.0020-0.014 (0%)	0.0014-0.013 (0%)	0.0013-0.013 (0%)	0.0016-0.013 (0%)	0.0013-0.012 (0%)	0.0010-0.013 (0%)	0.0015-0.012 (0%)	0.0016-0.013 (0%)	0.0013-0.013 (0%)	0.0018-0.013 (0%)
	High consumers	0.0046-0.019 (0%)	0.0039-0.018 (0%)	0.0049-0.020 (0%)	0.0034-0.020 (0%)	0.0030-0.020 (0%)	0.0043-0.020 (0%)	0.0033-0.019 (0%)	0.0032-0.019 (0%)	0.0037-0.018 (0%)	0.0039-0.019 (0%)	0.0035-0.019 (0%)	0.0046-0.020 (0%)

		Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)											
	Age-gender groups	Aged 18-49			Aged 50-64			Aged 65 or above			Aged 18 or above		
		All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Sulfoxaflor (SUL)	Average consumers	0.0012-0.024 (0%)	0.00077-0.023 (0%)	0.0015-0.025 (0%)	0.0013-0.024 (0%)	0.00096-0.024 (0%)	0.0017-0.025 (0%)	0.0013-0.023 (0%)	0.0011-0.024 (0%)	0.0015-0.022 (0%)	0.0012-0.024 (0%)	0.00090-0.024 (0%)	0.0016-0.024 (0%)
	High consumers	0.0028-0.034 (0-0.067%)	0.0019-0.033 (0-0.066%)	0.0036-0.035 (0-0.069%)	0.0033-0.035 (0-0.070%)	0.0025-0.035 (0-0.071%)	0.0040-0.035 (0-0.069%)	0.0034-0.033 (0-0.066%)	0.0028-0.034 (0-0.069%)	0.0039-0.033 (0-0.066%)	0.0031-0.034 (0-0.068%)	0.0024-0.034 (0-0.068%)	0.0037-0.034 (0-0.068%)
Thiacloprid (THIA)	Average consumers	0.00090-0.0050 (0-0.050%)	0.00072-0.0048 (0%)	0.0011-0.0053 (0-0.053%)	0.0011-0.0053 (0-0.053%)	0.0010-0.0052 (0-0.52%)	0.0013-0.0054 (0-0.054%)	0.0012-0.0050 (0-0.050%)	0.0012-0.0051 (0-0.051%)	0.0011-0.0048 (0%)	0.0010-0.0051 (0-0.051%)	0.00091-0.0050 (0-0.050%)	0.0011-0.0052 (0-0.052%)
	High consumers	0.0025-0.0073 (0-0.073%)	0.0019-0.0069 (0-0.069%)	0.0029-0.0079 (0-0.079%)	0.0029-0.0079 (0-0.079%)	0.0026-0.0077 (0-0.077%)	0.0033-0.0081 (0-0.081%)	0.0031-0.0077 (0-0.077%)	0.0030-0.0080 (0-0.080%)	0.0031-0.0075 (0-0.075%)	0.0028-0.0077 (0-0.077%)	0.0024-0.0074 (0-0.074%)	0.0030-0.0078 (0-0.078%)
Thiamethoxam (THI)	Average consumers	0.096-0.11 (0.12-0.13%)	0.080-0.090 (0.099-0.11%)	0.11-0.12 (0.14-0.15%)	0.10-0.11 (0.13-0.14%)	0.098-0.11 (0.12-0.13%)	0.10-0.11 (0.13-0.14%)	0.085-0.095 (0.11-0.12%)	0.071-0.080 (0.089-0.10%)	0.097-0.11 (0.12-0.13%)	0.095-0.11 (0.12-0.13%)	0.083-0.093 (0.10-0.12%)	0.11-0.12 (0.13-0.15%)
	High consumers	0.24-0.25 (0.30-0.32%)	0.19-0.19 (0.23-0.24%)	0.30-0.31 (0.37-0.38%)	0.24-0.25 (0.29-0.31%)	0.23-0.24 (0.29-0.30%)	0.24-0.25 (0.29-0.31%)	0.22-0.23 (0.28-0.29%)	0.18-0.19 (0.22-0.24%)	0.25-0.26 (0.31-0.33%)	0.23-0.25 (0.29-0.31%)	0.19-0.20 (0.24-0.25%)	0.27-0.28 (0.33-0.34%)
Organophosphorus pesticides (OPPs)													
Acephate	Average consumers	0.00079-0.37 (0-1.2%)	0.00056-0.36 (0-1.2%)	0.0010-0.38 (0-1.3%)	0.00075-0.38 (0-1.3%)	0.00075-0.38 (0-1.3%)	0.00075-0.38 (0-1.3%)	0.00058-0.35 (0-1.2%)	0.00053-0.37 (0-1.2%)	0.00062-0.34 (0-1.1%)	0.00074-0.37 (0-1.2%)	0.00061-0.37 (0-1.2%)	0.00085-0.37 (0-1.2%)
	High consumers	0.00089-0.52 (0-1.7%)	0.00055-0.51 (0-1.7%)	0.0015-0.52 (0-1.7%)	0.00087-0.54 (0-1.8%)	0.00063-0.54 (0-1.8%)	0.0010-0.52 (0-1.7%)	0.00068-0.51 (0-1.7%)	0.00060-0.52 (0-1.7%)	0.00072-0.50 (0-1.7%)	0.00082-0.52 (0-1.7%)	0.00058-0.52 (0-1.7%)	0.0011-0.52 (0-1.7%)
Chlorpyrifos	Average consumers	0.0029-0.0071 (0-0.071%)	0.0025-0.0066 (0-0.066%)	0.0033-0.0075 (0-0.075%)	0.0031-0.0073 (0-0.073%)	0.0029-0.0072 (0-0.072%)	0.0033-0.0075 (0-0.075%)	0.0030-0.0070 (0-0.070%)	0.0032-0.0073 (0-0.073%)	0.0029-0.0067 (0-0.067%)	0.0030-0.0071 (0-0.071%)	0.0028-0.0069 (0-0.069%)	0.0032-0.0073 (0-0.073%)
	High consumers	0.0060-0.011 (0.060-0.11%)	0.0051-0.0097 (0.051-0.097%)	0.0067-0.011 (0.067-0.11%)	0.0064-0.011 (0.064-0.11%)	0.0060-0.011 (0.060-0.11%)	0.0069-0.012 (0.069-0.12%)	0.0064-0.011 (0.064-0.11%)	0.0061-0.011 (0.061-0.11%)	0.0067-0.011 (0.067-0.11%)	0.0063-0.011 (0.063-0.11%)	0.0057-0.011 (0.057-0.11%)	0.0068-0.011 (0.068-0.11%)
Chlorpyrifos methyl	Average consumers	0-0.012 (0-0.12%)	0-0.012 (0-0.12%)	0-0.012 (0-0.12%)	0-0.012 (0-0.12%)	0-0.012 (0-0.12%)	0-0.012 (0-0.12%)	0-0.011 (0-0.11%)	0-0.012 (0-0.12%)	0-0.011 (0-0.11%)	0-0.012 (0-0.12%)	0-0.012 (0-0.12%)	0-0.012 (0-0.12%)
	High consumers	0.0017-0.017 (0-0.17%)	0.0017-0.017 (0-0.17%)	0.0018-0.017 (0-0.17%)	0.0015-0.017 (0-0.17%)	0.0015-0.018 (0-0.18%)	0.0016-0.017 (0-0.17%)	0.00076-0.017 (0-0.17%)	0-0.017 (0-0.17%)	0.0012-0.016 (0-0.16%)	0.0016-0.017 (0-0.17%)	0.0015-0.017 (0-0.17%)	0.0016-0.017 (0-0.17%)
Diazinon	Average consumers	0-0.0045 (0-0.15%)	0-0.0045 (0-0.15%)	0-0.0046 (0-0.15%)	0-0.0046 (0-0.15%)	0-0.0046 (0-0.15%)	0-0.0045 (0-0.15%)	0-0.0043 (0-0.14%)	0-0.0045 (0-0.15%)	0-0.0041 (0-0.14%)	0-0.0045 (0-0.15%)	0-0.0045 (0-0.15%)	0-0.0045 (0-0.15%)
	High consumers	0-0.0064 (0-0.21%)	0.00061-0.0063 (0-0.21%)	0-0.0064 (0-0.21%)	0-0.0066 (0-0.22%)	0-0.0068 (0-0.23%)	0-0.0064 (0-0.21%)	0-0.0063 (0-0.21%)	0-0.0065 (0-0.22%)	0-0.0060 (0-0.20%)	0-0.0064 (0-0.21%)	0-0.0065 (0-0.22%)	0-0.0063 (0-0.21%)
Dichlorvos	Average consumers	0.0022-0.025 (0.055-0.62%)	0.0019-0.024 (0-0.60%)	0.0024-0.025 (0.061-0.64%)	0.0026-0.025 (0.064-0.63%)	0.0027-0.025 (0.068-0.64%)	0.0024-0.025 (0.061-0.63%)	0.0019-0.023 (0-0.59%)	0.0021-0.024 (0.053-0.61%)	0.0017-0.023 (0-0.56%)	0.0022-0.025 (0.056-0.62%)	0.0022-0.025 (0.055-0.61%)	0.0023-0.025 (0.057-0.62%)
	High consumers	0.0081-0.035 (0.20-0.88%)	0.0074-0.034 (0.18-0.84%)	0.0090-0.036 (0.22-0.90%)	0.0086-0.035 (0.21-0.88%)	0.0086-0.036 (0.21-0.90%)	0.0086-0.035 (0.21-0.88%)	0.0073-0.034 (0.18-0.85%)	0.0082-0.036 (0.20-0.90%)	0.0064-0.033 (0.16-0.82%)	0.0082-0.035 (0.20-0.87%)	0.0079-0.035 (0.20-0.87%)	0.0083-0.035 (0.21-0.88%)
Dimethoate	Average consumers	0.0017-0.017 (0.17-1.7%)	0.0014-0.017 (0.14-1.7%)	0.0020-0.018 (0.20-1.8%)	0.0014-0.017 (0.14-1.7%)	0.00097-0.017 (0.097-1.7%)	0.0018-0.017 (0.18-1.7%)	0.0018-0.017 (0.18-1.7%)	0.0018-0.017 (0.18-1.7%)	0.0019-0.016 (0.19-1.6%)	0.0017-0.017 (0.17-1.7%)	0.0014-0.017 (0.14-1.7%)	0.0019-0.017 (0.19-1.7%)
	High consumers	0.0021-0.024 (0.21-2.4%)	0.0018-0.023 (0.18-2.3%)	0.0024-0.024 (0.24-2.4%)	0.0024-0.025 (0.24-2.5%)	0.0018-0.024 (0.18-2.4%)	0.0033-0.025 (0.33-2.5%)	0.0024-0.025 (0.24-2.5%)	0.0020-0.025 (0.20-2.5%)	0.0032-0.023 (0.32-2.3%)	0.0022-0.024 (0.22-2.4%)	0.0019-0.024 (0.19-2.4%)	0.0028-0.025 (0.28-2.5%)
Disulfoton	Average consumers	0-0.042 (0-14%)	0-0.041 (0-14%)	0-0.043 (0-14%)	0-0.043 (0-14%)	0-0.043 (0-14%)	0-0.043 (0-14%)	0-0.040 (0-13%)	0-0.042 (0-14%)	0-0.039 (0-13%)	0-0.042 (0-14%)	0-0.042 (0-14%)	0-0.042 (0-14%)
	High consumers	0-0.059 (0-20%)	0-0.058 (0-19%)	0-0.060 (0-20%)	0-0.062 (0-21%)	0-0.063 (0-21%)	0-0.060 (0-20%)	0-0.060 (0-20%)	0-0.062 (0-21%)	0-0.056 (0-19%)	0-0.060 (0-20%)	0-0.061 (0-20%)	0-0.059 (0-20%)

		Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)											
	Age-gender groups	Aged 18-49			Aged 50-64			Aged 65 or above			Aged 18 or above		
		All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Edifenphos	Average consumers	0-0.0044 (0-0.15%)	0-0.0043 (0-0.14%)	0-0.0045 (0-0.15%)	0-0.0045 (0-0.15%)	0-0.0046 (0-0.15%)	0-0.0045 (0-0.15%)	0-0.0042 (0-0.14%)	0-0.0044 (0-0.15%)	0-0.0041 (0-0.14%)	0-0.0044 (0-0.15%)	0-0.0044 (0-0.15%)	0-0.0044 (0-0.15%)
	High consumers	0-0.0062 (0-0.21%)	0-0.0061 (0-0.20%)	0-0.0063 (0-0.21%)	0-0.0065 (0-0.22%)	0-0.0066 (0-0.22%)	0-0.0063 (0-0.21%)	0-0.0062 (0-0.21%)	0-0.0064 (0-0.21%)	0-0.0059 (0-0.20%)	0-0.0063 (0-0.21%)	0-0.0063 (0-0.21%)	0-0.0062 (0-0.21%)
Ethion	Average consumers	0-0.0046 (0-0.23%)	0-0.0046 (0-0.23%)	0-0.0046 (0-0.23%)	0-0.0046 (0-0.23%)	0-0.0047 (0-0.23%)	0-0.0045 (0-0.23%)	0-0.0043 (0-0.21%)	0-0.0045 (0-0.22%)	0-0.0041 (0-0.20%)	0-0.0045 (0-0.23%)	0-0.0046 (0-0.23%)	0-0.0045 (0-0.22%)
	High consumers	0-0.0065 (0-0.33%)	0-0.0065 (0-0.33%)	0-0.0066 (0-0.33%)	0-0.0066 (0-0.33%)	0-0.0069 (0-0.34%)	0-0.0063 (0-0.32%)	0-0.0062 (0-0.31%)	0-0.0064 (0-0.32%)	0-0.0060 (0-0.30%)	0-0.0065 (0-0.32%)	0-0.0066 (0-0.33%)	0-0.0063 (0-0.32%)
Fenthion	Average consumers	0.0031-0.062 (0-0.89%)	0.0020-0.060 (0-0.85%)	0.0041-0.064 (0.058-0.92%)	0.0025-0.062 (0-0.89%)	0.0022-0.063 (0-0.89%)	0.0028-0.062 (0-0.89%)	0.0022-0.059 (0-0.84%)	0.0019-0.061 (0-0.87%)	0.0026-0.057 (0-0.81%)	0.0028-0.061 (0-0.88%)	0.0021-0.061 (0-0.87%)	0.0034-0.062 (0-0.89%)
	High consumers	0.0036-0.089 (0.052-1.3%)	0.0023-0.086 (0-1.2%)	0.0050-0.091 (0.072-1.3%)	0.0028-0.091 (0-1.3%)	0.0019-0.094 (0-1.3%)	0.0043-0.090 (0.061-1.3%)	0.0010-0.087 (0-1.2%)	0.00078-0.092 (0-1.3%)	0.0017-0.084 (0-1.2%)	0.0029-0.089 (0-1.3%)	0.0019-0.088 (0-1.3%)	0.0042-0.090 (0.060-1.3%)
Fosthiazate	Average consumers	0.0011-0.0055 (0-0.14%)	0.0010-0.0053 (0-0.13%)	0.0012-0.0057 (0-0.14%)	0.0012-0.0057 (0-0.14%)	0.0011-0.0056 (0-0.14%)	0.0013-0.0057 (0-0.14%)	0.0011-0.0053 (0-0.13%)	0.00088-0.0053 (0-0.13%)	0.0013-0.0053 (0-0.13%)	0.0011-0.0055 (0-0.14%)	0.0010-0.0054 (0-0.13%)	0.0013-0.0056 (0-0.14%)
	High consumers	0.0030-0.0084 (0.076-0.21%)	0.0028-0.0080 (0.071-0.20%)	0.0032-0.0088 (0.079-0.22%)	0.0031-0.0089 (0.078-0.22%)	0.0028-0.0089 (0.071-0.22%)	0.0035-0.0087 (0.087-0.22%)	0.0028-0.0080 (0.071-0.20%)	0.0022-0.0079 (0.054-0.20%)	0.0033-0.0085 (0.082-0.21%)	0.0030-0.0084 (0.075-0.21%)	0.0027-0.0083 (0.068-0.21%)	0.0033-0.0086 (0.082-0.22%)
Isocarbophos	Average consumers	0.0011-0.0055 (0-0.18%)	0.0011-0.0054 (0-0.18%)	0.0011-0.0056 (0-0.19%)	0.0011-0.0056 (0-0.19%)	0.0010-0.0056 (0-0.19%)	0.0011-0.0056 (0-0.19%)	0.00097-0.0052 (0-0.17%)	0.00094-0.0054 (0-0.18%)	0.00099-0.0051 (0-0.17%)	0.0011-0.0055 (0-0.18%)	0.0010-0.0054 (0-0.18%)	0.0011-0.0055 (0-0.18%)
	High consumers	0.0027-0.0081 (0.089-0.27%)	0.0027-0.0078 (0.090-0.26%)	0.0026-0.0084 (0.088-0.28%)	0.0026-0.0083 (0.088-0.28%)	0.0029-0.0084 (0.096-0.28%)	0.0026-0.0081 (0.086-0.27%)	0.0022-0.0077 (0.074-0.26%)	0.0021-0.0078 (0.068-0.26%)	0.0023-0.0075 (0.078-0.25%)	0.0026-0.0081 (0.087-0.27%)	0.0026-0.0080 (0.088-0.27%)	0.0026-0.0081 (0.086-0.27%)
Malathion	Average consumers	0-0.0047 (0%)	0-0.0045 (0%)	0-0.0048 (0%)	0-0.0047 (0%)	0-0.0047 (0%)	0-0.0048 (0%)	0-0.0045 (0%)	0-0.0047 (0%)	0-0.0044 (0%)	0-0.0047 (0%)	0-0.0046 (0%)	0-0.0047 (0%)
	High consumers	0.00060-0.0065 (0%)	0-0.0064 (0%)	0.00076-0.0067 (0%)	0.00062-0.0068 (0%)	0.00051-0.0069 (0%)	0.00078-0.0067 (0%)	0.00072-0.0066 (0%)	0.00070-0.0069 (0%)	0.00072-0.0064 (0%)	0.00064-0.0066 (0%)	0.00053-0.0066 (0%)	0.00075-0.0067 (0%)
Methamidophos	Average consumers	0-0.046 (0-1.2%)	0-0.045 (0-1.1%)	0-0.047 (0-1.2%)	0-0.047 (0-1.2%)	0-0.047 (0-1.2%)	0-0.047 (0-1.2%)	0-0.044 (0-1.1%)	0-0.046 (0-1.1%)	0-0.043 (0-1.1%)	0-0.046 (0-1.2%)	0-0.046 (0-1.1%)	0-0.046 (0-1.2%)
	High consumers	0-0.065 (0-1.6%)	0-0.063 (0-1.6%)	0-0.065 (0-1.6%)	0-0.067 (0-1.7%)	0-0.068 (0-1.7%)	0-0.065 (0-1.6%)	0-0.064 (0-1.6%)	0-0.065 (0-1.6%)	0-0.062 (0-1.5%)	0-0.065 (0-1.6%)	0-0.065 (0-1.6%)	0-0.065 (0-1.6%)
Methidathion	Average consumers	0-0.012 (0-0.59%)	0-0.011 (0-0.57%)	0-0.012 (0-0.60%)	0-0.012 (0-0.60%)	0-0.012 (0-0.60%)	0-0.012 (0-0.60%)	0-0.011 (0-0.56%)	0-0.012 (0-0.59%)	0-0.011 (0-0.54%)	0-0.012 (0-0.59%)	0-0.012 (0-0.59%)	0-0.012 (0-0.59%)
	High consumers	0-0.016 (0-0.82%)	0-0.016 (0-0.81%)	0-0.017 (0-0.84%)	0-0.017 (0-0.86%)	0-0.017 (0-0.87%)	0-0.017 (0-0.84%)	0-0.017 (0-0.83%)	0-0.017 (0-0.85%)	0-0.016 (0-0.79%)	0-0.017 (0-0.84%)	0-0.017 (0-0.84%)	0-0.017 (0-0.83%)
Phorate	Average consumers	0-0.042 (0-6.0%)	0-0.041 (0-5.9%)	0-0.043 (0-6.1%)	0-0.043 (0-6.1%)	0-0.044 (0-6.2%)	0-0.043 (0-6.1%)	0-0.040 (0-5.8%)	0-0.043 (0-6.1%)	0-0.039 (0-5.5%)	0-0.042 (0-6.0%)	0-0.042 (0-6.0%)	0-0.042 (0-6.0%)
	High consumers	0.00052-0.059 (0.074-8.5%)	0.00052-0.058 (0.074-8.2%)	0.00052-0.060 (0.074-8.6%)	0-0.062 (0.068-8.8%)	0-0.063 (0.063-9.0%)	0.00052-0.060 (0.074-8.6%)	0-0.060 (0.053-8.5%)	0-0.062 (0.050-8.9%)	0-0.056 (0.056-8.0%)	0-0.060 (0.068-8.6%)	0-0.061 (0.066-8.7%)	0-0.060 (0.068-8.5%)
Phoxim	Average consumers	0.0068-0.011 (0.17-0.28%)	0.0064-0.011 (0.16-0.27%)	0.0072-0.011 (0.18-0.29%)	0.0070-0.011 (0.17-0.28%)	0.0072-0.012 (0.18-0.29%)	0.0068-0.011 (0.17-0.28%)	0.0071-0.011 (0.18-0.28%)	0.0077-0.012 (0.19-0.30%)	0.0066-0.011 (0.16-0.26%)	0.0069-0.011 (0.17-0.28%)	0.0069-0.011 (0.17-0.28%)	0.0069-0.011 (0.17-0.28%)
	High consumers	0.018-0.022 (0.44-0.56%)	0.016-0.021 (0.40-0.52%)	0.020-0.025 (0.49-0.61%)	0.017-0.022 (0.42-0.54%)	0.016-0.022 (0.41-0.55%)	0.017-0.022 (0.43-0.54%)	0.019-0.024 (0.47-0.59%)	0.021-0.025 (0.53-0.63%)	0.017-0.022 (0.43-0.56%)	0.018-0.022 (0.44-0.56%)	0.017-0.022 (0.42-0.54%)	0.018-0.023 (0.46-0.58%)

	Age-gender groups	Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)											
		Aged 18-49			Aged 50-64			Aged 65 or above			Aged 18 or above		
		All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Pirimiphos methyl	Average consumers	0.0011-0.0052 (0%)	0.0012-0.0052 (0%)	0.0011-0.0053 (0%)	0.00097-0.0052 (0%)	0.00097-0.0053 (0%)	0.00096-0.0052 (0%)	0.00077-0.0048 (0%)	0.00071-0.0050 (0%)	0.00082-0.0047 (0%)	0.0010-0.0052 (0%)	0.0010-0.0052 (0%)	0.0010-0.0051 (0%)
	High consumers	0.0027-0.0076 (0%)	0.0028-0.0074 (0%)	0.0026-0.0079 (0%)	0.0023-0.0075 (0%)	0.0024-0.0076 (0%)	0.0023-0.0075 (0%)	0.0019-0.0072 (0%)	0.0018-0.0073 (0%)	0.0020-0.0069 (0%)	0.0024-0.0075 (0%)	0.0025-0.0074 (0%)	0.0024-0.0075 (0%)
Profenofos	Average consumers	0.0014-0.0058 (0%)	0.0011-0.0054 (0%)	0.0016-0.0061 (0%)	0.00098-0.0055 (0%)	0.00093-0.0054 (0%)	0.0010-0.0055 (0%)	0.00077-0.0050 (0%)	0.00070-0.0051 (0%)	0.00083-0.0049 (0%)	0.0011-0.0055 (0%)	0.00097-0.0054 (0%)	0.0013-0.0057 (0%)
	High consumers	0.0035-0.0089 (0%)	0.0029-0.0084 (0%)	0.0044-0.0095 (0%)	0.0023-0.0083 (0%)	0.0019-0.0084 (0%)	0.0026-0.0083 (0%)	0.0016-0.0075 (0%)	0.0016-0.0079 (0%)	0.0017-0.0071 (0%)	0.0027-0.0084 (0%)	0.0024-0.0083 (0%)	0.0032-0.0086 (0%)
Triazophos	Average consumers	0-0.0045 (0-0.45%)	0-0.0044 (0-0.44%)	0-0.0046 (0-0.46%)	0-0.0046 (0-0.46%)	0-0.0046 (0-0.46%)	0-0.0045 (0-0.45%)	0-0.0043 (0-0.43%)	0-0.0045 (0-0.45%)	0-0.0041 (0-0.41%)	0-0.0045 (0-0.45%)	0-0.0045 (0-0.45%)	0-0.0045 (0-0.45%)
	High consumers	0-0.0063 (0-0.63%)	0-0.0061 (0-0.61%)	0-0.0063 (0-0.63%)	0-0.0065 (0-0.65%)	0-0.0066 (0-0.66%)	0-0.0063 (0-0.63%)	0-0.0062 (0-0.62%)	0-0.0064 (0-0.64%)	0-0.0060 (0-0.60%)	0-0.0063 (0-0.63%)	0-0.0064 (0-0.64%)	0-0.0063 (0-0.63%)
Trichlorfon	Average consumers	0-0.012 (0-0.59%)	0-0.012 (0-0.58%)	0-0.012 (0-0.60%)	0-0.012 (0-0.60%)	0-0.012 (0-0.60%)	0-0.012 (0-0.60%)	0-0.011 (0-0.56%)	0-0.012 (0-0.59%)	0-0.011 (0-0.54%)	0-0.012 (0-0.59%)	0-0.012 (0-0.59%)	0-0.012 (0-0.59%)
	High consumers	0-0.016 (0-0.82%)	0-0.016 (0-0.81%)	0-0.017 (0-0.84%)	0-0.017 (0-0.86%)	0-0.017 (0-0.87%)	0-0.017 (0-0.84%)	0-0.017 (0-0.83%)	0-0.017 (0-0.85%)	0-0.016 (0-0.79%)	0-0.017 (0-0.84%)	0-0.017 (0-0.84%)	0-0.017 (0-0.83%)
Carbamates													
Carbaryl	Average consumers	0-0.0045 (0-0.057%)	0-0.0044 (0-0.056%)	0-0.0046 (0-0.057%)	0-0.0046 (0-0.057%)	0-0.0046 (0-0.058%)	0-0.0045 (0-0.057%)	0-0.0043 (0-0.053%)	0-0.0045 (0-0.056%)	0-0.0041 (0-0.051%)	0-0.0045 (0-0.056%)	0-0.0045 (0-0.056%)	0-0.0045 (0-0.056%)
	High consumers	0-0.0064 (0-0.080%)	0-0.0063 (0-0.079%)	0-0.0064 (0-0.081%)	0-0.0066 (0-0.082%)	0-0.0067 (0-0.084%)	0-0.0063 (0-0.079%)	0-0.0062 (0-0.078%)	0-0.0064 (0-0.080%)	0-0.0060 (0-0.072%)	0-0.0064 (0-0.080%)	0-0.0065 (0-0.081%)	0-0.0063 (0-0.079%)
Carbosulfan	Average consumers	0.0044-0.097 (0-0.97%)	0.0030-0.094 (0-0.94%)	0.0055-0.10 (0.055-1.0%)	0.0034-0.098 (0-0.98%)	0.0030-0.099 (0-0.99%)	0.0037-0.098 (0-0.98%)	0.0030-0.092 (0-0.92%)	0.0025-0.096 (0-0.96%)	0.0034-0.089 (0-0.89%)	0.0038-0.096 (0-0.96%)	0.0029-0.096 (0-0.96%)	0.0046-0.097 (0-0.97%)
	High consumers	0.0050-0.14 (0.050-1.4%)	0.0042-0.13 (0-1.3%)	0.0078-0.14 (0.078-1.4%)	0.0039-0.14 (0-1.4%)	0.0026-0.15 (0-1.5%)	0.0051-0.14 (0.051-1.4%)	0.0015-0.14 (0-1.4%)	0.0012-0.14 (0-1.4%)	0.0019-0.13 (0-1.3%)	0.0039-0.14 (0-1.4%)	0.0033-0.14 (0-1.4%)	0.0052-0.14 (0.052-1.4%)
Fenobucarb (BPMC)	Average consumers	0-0.0045 (0%)	0-0.0044 (0%)	0-0.0045 (0%)	0-0.0045 (0%)	0-0.0046 (0%)	0-0.0045 (0%)	0-0.0043 (0%)	0-0.0045 (0%)	0-0.0041 (0%)	0-0.0044 (0%)	0-0.0044 (0%)	0-0.0044 (0%)
	High consumers	0-0.0062 (0%)	0-0.0061 (0%)	0-0.0063 (0%)	0-0.0065 (0%)	0-0.0066 (0%)	0-0.0063 (0%)	0-0.0062 (0%)	0-0.0065 (0%)	0-0.0060 (0%)	0-0.0063 (0%)	0-0.0064 (0%)	0-0.0063 (0%)
Isoprocarb	Average consumers	0.00086-0.013 (0-0.63%)	0.00090-0.012 (0-0.62%)	0.00081-0.013 (0-0.64%)	0.00079-0.013 (0-0.64%)	0.00080-0.013 (0-0.64%)	0.00078-0.013 (0-0.63%)	0-0.012 (0-0.58%)	0-0.012 (0-0.61%)	0-0.011 (0-0.56%)	0.00075-0.012 (0-0.62%)	0.00077-0.012 (0-0.62%)	0.00073-0.012 (0-0.62%)
	High consumers	0.0023-0.018 (0.12-0.91%)	0.0024-0.018 (0.12-0.90%)	0.0020-0.018 (0.098-0.91%)	0.0013-0.019 (0.067-0.94%)	0.0014-0.019 (0.072-0.95%)	0.0012-0.018 (0.061-0.92%)	0.00086-0.017 (0-0.85%)	0.00093-0.018 (0-0.88%)	0.00064-0.017 (0-0.83%)	0.0016-0.018 (0.079-0.91%)	0.0018-0.018 (0.089-0.92%)	0.0014-0.018 (0.070-0.90%)
Methomyl	Average consumers	0.00088-0.0093 (0%)	0-0.0088 (0%)	0.0012-0.0098 (0%)	0.0012-0.0098 (0%)	0.00076-0.0094 (0%)	0.0015-0.010 (0-0.050%)	0.00089-0.0090 (0%)	0.00056-0.0090 (0%)	0.0012-0.0089 (0%)	0.00096-0.0094 (0%)	0.00059-0.0090 (0%)	0.0013-0.0097 (0%)
	High consumers	0.0018-0.013 (0-0.065%)	0.0013-0.012 (0-0.062%)	0.0023-0.014 (0-0.068%)	0.0020-0.014 (0-0.070%)	0.0015-0.014 (0-0.069%)	0.0029-0.014 (0-0.070%)	0.0019-0.013 (0-0.067%)	0.0015-0.014 (0-0.068%)	0.0023-0.013 (0-0.066%)	0.0019-0.013 (0-0.067%)	0.0014-0.013 (0-0.065%)	0.0024-0.014 (0-0.068%)
Oxamyl	Average consumers	0.0011-0.013 (0-0.14%)	0.00092-0.012 (0-0.14%)	0.0012-0.013 (0-0.15%)	0.0010-0.013 (0-0.14%)	0.00094-0.013 (0-0.14%)	0.0011-0.013 (0-0.14%)	0.0010-0.012 (0-0.14%)	0.00086-0.013 (0-0.14%)	0.0011-0.012 (0-0.13%)	0.0010-0.013 (0-0.14%)	0.00091-0.013 (0-0.14%)	0.0011-0.013 (0-0.14%)
	High consumers	0.0038-0.018 (0-0.20%)	0.0033-0.017 (0-0.19%)	0.0041-0.019 (0-0.21%)	0.0035-0.019 (0-0.21%)	0.0031-0.020 (0-0.22%)	0.0037-0.019 (0-0.21%)	0.0038-0.018 (0-0.20%)	0.0033-0.019 (0-0.21%)	0.0040-0.018 (0-0.20%)	0.0037-0.018 (0-0.20%)	0.0033-0.018 (0-0.20%)	0.0041-0.019 (0-0.21%)

	Age-gender groups	Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)											
		Aged 18-49			Aged 50-64			Aged 65 or above			Aged 18 or above		
		All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Pirimicarb	Average consumers	0-0.028 (0-0.14%)	0-0.027 (0.0.13%)	0-0.028 (0-0.14%)	0-0.029 (0-0.14%)	0-0.029 (0.0.14%)	0-0.029 (0-0.14%)	0-0.027 (0-0.13%)	0-0.028 (0.0.14%)	0-0.026 (0-0.13%)	0-0.028 (0-0.14%)	0-0.028 (0.0.14%)	0-0.028 (0-0.14%)
	High consumers	0-0.039 (0-0.19%)	0-0.038 (0-0.19%)	0-0.040 (0-0.20%)	0-0.041 (0-0.21%)	0-0.042 (0-0.21%)	0-0.040 (0-0.20%)	0-0.040 (0-0.20%)	0-0.041 (0-0.21%)	0-0.038 (0-0.19%)	0-0.040 (0-0.20%)	0-0.040 (0-0.20%)	0-0.040 (0-0.20%)
Propamocarb	Average consumers	0.096-0.10 (0%)	0.077-0.080 (0%)	0.11-0.12 (0%)	0.11-0.12 (0%)	0.095-0.099 (0%)	0.13-0.13 (0%)	0.099-0.10 (0%)	0.084-0.088 (0%)	0.11-0.12 (0%)	0.10-0.10 (0%)	0.084-0.087 (0%)	0.12-0.12 (0%)
	High consumers	0.18-0.19 (0%)	0.15-0.16 (0%)	0.22-0.22 (0.054-0.055%)	0.22-0.22 (0.055-0.056%)	0.20-0.20 (0.050-0.051%)	0.25-0.26 (0.064-0.064%)	0.20-0.20 (0.050-0.051%)	0.16-0.16 (0%)	0.23-0.23 (0.056-0.057%)	0.20-0.20 (0-0.050%)	0.16-0.17 (0%)	0.23-0.23 (0.058-0.059%)
Dithiocarbamate (DTC) metabolites													
N,N'-Dimethylthiourea (DMTU)	Average consumers	0-0.012 (0-1.2%)	0-0.011 (0-1.1%)	0-0.012 (0-1.2%)	0-0.012 (0-1.2%)	0-0.012 (0-1.2%)	0-0.012 (0-1.2%)	0-0.011 (0-1.1%)	0-0.012 (0-1.2%)	0-0.011 (0-1.1%)	0-0.012 (0-1.2%)	0-0.012 (0-1.2%)	0-0.012 (0-1.2%)
	High consumers	0-0.016 (0-1.6%)	0-0.016 (0-1.6%)	0-0.017 (0-1.7%)	0-0.017 (0-1.7%)	0-0.017 (0-1.7%)	0-0.017 (0-1.7%)	0-0.017 (0-1.7%)	0-0.017 (0-1.7%)	0-0.016 (0-1.6%)	0-0.017 (0-1.7%)	0-0.017 (0-1.7%)	0-0.017 (0-1.7%)
Ethylene thiourea (ETU)	Average consumers	0.013-0.035 (0.31-0.88%)	0.010-0.032 (0.26-0.81%)	0.015-0.038 (0.36-0.94%)	0.014-0.037 (0.34-0.92%)	0.013-0.036 (0.33-0.91%)	0.014-0.037 (0.36-0.93%)	0.012-0.034 (0.31-0.85%)	0.010-0.033 (0.25-0.82%)	0.014-0.035 (0.36-0.88%)	0.013-0.035 (0.32-0.89%)	0.011-0.034 (0.28-0.84%)	0.014-0.037 (0.36-0.93%)
	High consumers	0.033-0.058 (0.82-1.5%)	0.024-0.048 (0.60-1.2%)	0.042-0.068 (1.1-1.7%)	0.038-0.062 (0.96-1.6%)	0.035-0.061 (0.87-1.5%)	0.041-0.065 (1.0-1.6%)	0.033-0.058 (0.83-1.5%)	0.030-0.053 (0.74-1.3%)	0.038-0.062 (0.94-1.6%)	0.034-0.061 (0.86-1.5%)	0.030-0.053 (0.74-1.3%)	0.041-0.066 (1.0-1.6%)
Propylene thiourea (PTU)	Average consumers	0-0.021 (0.11-7.1%)	0-0.021 (0.081-6.9%)	0-0.022 (0.14-7.2%)	0-0.022 (0.14-7.3%)	0-0.022 (0.11-7.4%)	0-0.022 (0.16-7.2%)	0-0.021 (0.14-6.9%)	0-0.022 (0.13-7.2%)	0-0.020 (0.15-6.5%)	0-0.021 (0.12-7.1%)	0-0.021 (0.10-7.1%)	0-0.021 (0.15-7.1%)
	High consumers	0.0010-0.030 (0.34-10%)	0.00077-0.029 (0.26-9.7%)	0.0012-0.030 (0.41-10%)	0.0013-0.032 (0.43-11%)	0.0012-0.032 (0.40-11%)	0.0014-0.031 (0.46-10%)	0.0014-0.030 (0.46-10%)	0.0013-0.031 (0.45-10%)	0.0014-0.029 (0.47-9.5%)	0.0012-0.031 (0.39-10%)	0.0010-0.031 (0.33-10%)	0.0013-0.030 (0.44-10%)
Other pesticides													
Ametoctradin	Average consumers	0.017-0.061 (0%)	0.0086-0.050 (0%)	0.025-0.070 (0%)	0.019-0.060 (0%)	0.013-0.053 (0%)	0.025-0.067 (0%)	0.026-0.062 (0%)	0.016-0.052 (0%)	0.034-0.071 (0%)	0.020-0.061 (0%)	0.012-0.051 (0%)	0.027-0.069 (0%)
	High consumers	0.015-0.077 (0%)	0.012-0.069 (0%)	0.019-0.085 (0%)	0.018-0.077 (0%)	0.015-0.072 (0%)	0.025-0.085 (0%)	0.023-0.079 (0%)	0.021-0.071 (0%)	0.032-0.082 (0%)	0.017-0.077 (0%)	0.014-0.070 (0%)	0.023-0.085 (0%)
Bixafen	Average consumers	0-0.0090 (0%)	0-0.0088 (0%)	0-0.0092 (0%)	0-0.0092 (0%)	0-0.0093 (0%)	0-0.0091 (0%)	0-0.0086 (0%)	0-0.0090 (0%)	0-0.0083 (0%)	0-0.0090 (0%)	0-0.0090 (0%)	0-0.0090 (0%)
	High consumers	0-0.013 (0-0.063%)	0-0.012 (0-0.062%)	0-0.013 (0-0.064%)	0-0.013 (0-0.066%)	0-0.013 (0-0.067%)	0-0.013 (0-0.064%)	0-0.013 (0-0.063%)	0-0.013 (0-0.065%)	0-0.012 (0-0.060%)	0-0.013 (0-0.064%)	0-0.013 (0-0.064%)	0-0.013 (0-0.064%)
Cyantraniliprole	Average consumers	0-0.0047 (0%)	0-0.0045 (0%)	0-0.0048 (0%)	0-0.0048 (0%)	0-0.0048 (0%)	0-0.0048 (0%)	0-0.0046 (0%)	0-0.0047 (0%)	0-0.0044 (0%)	0-0.0047 (0%)	0-0.0047 (0%)	0-0.0047 (0%)
	High consumers	0.00083-0.0065 (0%)	0.00073-0.0064 (0%)	0.00093-0.0067 (0%)	0.0010-0.0069 (0%)	0.00090-0.0071 (0%)	0.0011-0.0068 (0%)	0.0010-0.0066 (0%)	0.00090-0.0069 (0%)	0.0011-0.0065 (0%)	0.00094-0.0067 (0%)	0.00084-0.0067 (0%)	0.0010-0.0066 (0%)
Cyazofamid	Average consumers	0.031-0.052 (0%)	0.025-0.046 (0%)	0.035-0.057 (0%)	0.031-0.053 (0%)	0.029-0.051 (0%)	0.033-0.055 (0%)	0.031-0.052 (0%)	0.026-0.047 (0%)	0.036-0.055 (0%)	0.031-0.052 (0%)	0.027-0.048 (0%)	0.035-0.056 (0%)
	High consumers	0.095-0.12 (0-0.059%)	0.082-0.11 (0-0.053%)	0.10-0.13 (0.051-0.063%)	0.096-0.12 (0-0.060%)	0.091-0.11 (0-0.055%)	0.10-0.12 (0.052-0.062%)	0.11-0.13 (0.053-0.063%)	0.083-0.11 (0-0.057%)	0.11-0.13 (0.055-0.065%)	0.097-0.12 (0-0.060%)	0.084-0.11 (0-0.054%)	0.10-0.13 (0.052-0.063%)
Cyflumetofen	Average consumers	0.00086-0.29 (0-0.29%)	0.00077-0.29 (0-0.29%)	0.00093-0.30 (0-0.30%)	0.00098-0.30 (0-0.30%)	0.00075-0.30 (0-0.30%)	0.0012-0.30 (0-0.30%)	0.0013-0.28 (0-0.28%)	0.0012-0.29 (0-0.29%)	0.0014-0.27 (0-0.27%)	0.00098-0.29 (0-0.29%)	0.00085-0.29 (0-0.29%)	0.0011-0.29 (0-0.29%)
	High consumers	0.00090-0.41 (0-0.41%)	0.00069-0.40 (0-0.40%)	0.0010-0.42 (0-0.42%)	0.0021-0.42 (0-0.42%)	0.0016-0.43 (0-0.43%)	0.0023-0.41 (0-0.41%)	0.0018-0.41 (0-0.41%)	0.0017-0.41 (0-0.41%)	0.0018-0.39 (0-0.39%)	0.0014-0.41 (0-0.41%)	0.0012-0.41 (0-0.41%)	0.0017-0.41 (0-0.41%)

	Age-gender groups	Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)											
		Aged 18-49			Aged 50-64			Aged 65 or above			Aged 18 or above		
		All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Ethephon	Average consumers	0.027-0.14 (0.054-0.28%)	0.022-0.13 (0-0.27%)	0.032-0.15 (0.063-0.29%)	0.037-0.15 (0.074-0.30%)	0.032-0.15 (0.063-0.30%)	0.041-0.16 (0.083-0.31%)	0.035-0.14 (0.071-0.29%)	0.033-0.15 (0.066-0.29%)	0.038-0.14 (0.075-0.28%)	0.032-0.14 (0.063-0.29%)	0.027-0.14 (0.054-0.28%)	0.036-0.15 (0.071-0.30%)
	High consumers	0.084-0.21 (0.17-0.43%)	0.073-0.20 (0.15-0.40%)	0.096-0.22 (0.19-0.45%)	0.12-0.25 (0.23-0.50%)	0.12-0.24 (0.23-0.49%)	0.13-0.26 (0.26-0.52%)	0.11-0.24 (0.22-0.48%)	0.10-0.24 (0.21-0.48%)	0.11-0.24 (0.22-0.47%)	0.099-0.23 (0.20-0.46%)	0.084-0.22 (0.17-0.43%)	0.11-0.24 (0.21-0.48%)
Fenazaquin	Average consumers	0-0.0044 (0%)	0-0.0043 (0%)	0-0.0045 (0%)	0-0.0045 (0%)	0-0.0046 (0%)	0-0.0045 (0%)	0-0.0042 (0%)	0-0.0044 (0%)	0-0.0041 (0%)	0-0.0044 (0%)	0-0.0044 (0%)	0-0.0044 (0%)
	High consumers	0-0.0062 (0%)	0-0.0061 (0%)	0-0.0063 (0%)	0-0.0065 (0%)	0-0.0066 (0%)	0-0.0063 (0%)	0-0.0062 (0%)	0-0.0064 (0%)	0-0.0060 (0%)	0-0.0063 (0%)	0-0.0063 (0%)	0-0.0062 (0%)
Fenpyrazamine	Average consumers	0-0.0045 (0%)	0-0.0044 (0%)	0-0.0045 (0%)	0-0.0045 (0%)	0-0.0046 (0%)	0-0.0045 (0%)	0-0.0043 (0%)	0-0.0045 (0%)	0-0.0041 (0%)	0-0.0044 (0%)	0-0.0044 (0%)	0-0.0044 (0%)
	High consumers	0-0.0063 (0%)	0-0.0061 (0%)	0-0.0063 (0%)	0-0.0065 (0%)	0-0.0066 (0%)	0-0.0063 (0%)	0-0.0063 (0%)	0-0.0064 (0%)	0-0.0059 (0%)	0-0.0063 (0%)	0-0.0064 (0%)	0-0.0063 (0%)
Fipronil	Average consumers	0.0024-0.040 (1.2-20%)	0.0022-0.038 (1.1-19%)	0.0027-0.041 (1.3-20%)	0.0025-0.040 (1.3-20%)	0.0025-0.040 (1.3-20%)	0.0026-0.040 (1.3-20%)	0.0022-0.038 (1.1-19%)	0.0021-0.039 (1.1-20%)	0.0023-0.037 (1.1-18%)	0.0024-0.039 (1.2-20%)	0.0023-0.039 (1.1-20%)	0.0026-0.040 (1.3-20%)
	High consumers	0.0067-0.055 (3.4-28%)	0.0059-0.054 (3.0-27%)	0.0074-0.057 (3.7-28%)	0.0066-0.056 (3.3-28%)	0.0066-0.057 (3.3-29%)	0.0067-0.055 (3.4-28%)	0.0061-0.054 (3.0-27%)	0.0059-0.056 (2.9-28%)	0.0063-0.053 (3.2-27%)	0.0066-0.055 (3.3-28%)	0.0062-0.055 (3.1-28%)	0.0070-0.056 (3.5-28%)
Fluxapyroxad	Average consumers	0.011-0.015 (0.054-0.075%)	0.0097-0.014 (0-0.069%)	0.012-0.016 (0.058-0.079%)	0.011-0.015 (0.054-0.076%)	0.010-0.015 (0.051-0.073%)	0.012-0.016 (0.058-0.079%)	0.010-0.014 (0.050-0.070%)	0.0095-0.014 (0-0.069%)	0.010-0.014 (0.052-0.071%)	0.011-0.015 (0.053-0.074%)	0.0098-0.014 (0-0.070%)	0.011-0.015 (0.057-0.077%)
	High consumers	0.023-0.027 (0.12-0.14%)	0.023-0.027 (0.11-0.14%)	0.023-0.027 (0.12-0.14%)	0.023-0.028 (0.11-0.14%)	0.022-0.026 (0.11-0.13%)	0.024-0.028 (0.12-0.14%)	0.021-0.025 (0.11-0.13%)	0.021-0.025 (0.10-0.13%)	0.021-0.025 (0.11-0.13%)	0.022-0.027 (0.11-0.14%)	0.022-0.027 (0.11-0.13%)	0.023-0.027 (0.12-0.14%)
Fosetyl aluminium	Average consumers	4.7-5.1 (0.47-0.51%)	4.5-4.9 (0.45-0.49%)	4.9-5.3 (0.49-0.53%)	5.0-5.4 (0.50-0.54%)	5.0-5.3 (0.50-0.53%)	5.1-5.4 (0.51-0.54%)	4.9-5.2 (0.49-0.52%)	4.8-5.1 (0.48-0.51%)	5.0-5.4 (0.50-0.54%)	4.9-5.2 (0.49-0.52%)	4.7-5.1 (0.47-0.51%)	5.0-5.4 (0.50-0.54%)
	High consumers	7.3-7.7 (0.73-0.77%)	6.9-7.3 (0.69-0.73%)	7.4-7.9 (0.74-0.79%)	7.6-8.1 (0.76-0.81%)	7.3-7.6 (0.73-0.76%)	7.9-8.3 (0.79-0.83%)	7.5-7.9 (0.75-0.79%)	7.4-7.7 (0.74-0.77%)	7.6-8.1 (0.76-0.81%)	7.4-7.9 (0.74-0.79%)	7.2-7.6 (0.72-0.76%)	7.7-8.1 (0.77-0.81%)
Glufosinate ammonium	Average consumers	0.0085-0.30 (0.085-3.0%)	0.0058-0.29 (0.058-2.9%)	0.011-0.30 (0.11-3.0%)	0.0095-0.30 (0.095-3.0%)	0.0078-0.31 (0.078-3.1%)	0.011-0.30 (0.11-3.0%)	0.0094-0.29 (0.094-2.9%)	0.0085-0.30 (0.085-3.0%)	0.010-0.27 (0.10-2.7%)	0.0090-0.30 (0.090-3.0%)	0.0070-0.30 (0.070-3.0%)	0.011-0.30 (0.11-3.0%)
	High consumers	0.023-0.42 (0.23-4.2%)	0.018-0.40 (0.18-4.0%)	0.027-0.43 (0.27-4.3%)	0.028-0.44 (0.28-4.4%)	0.024-0.44 (0.24-4.4%)	0.031-0.43 (0.31-4.3%)	0.027-0.42 (0.27-4.2%)	0.026-0.43 (0.26-4.3%)	0.029-0.40 (0.29-4.0%)	0.026-0.42 (0.26-4.2%)	0.022-0.42 (0.22-4.2%)	0.029-0.42 (0.29-4.2%)
Glyphosate	Average consumers	0.069-0.72 (0-0.072%)	0.071-0.70 (0-0.070%)	0.068-0.73 (0-0.073%)	0.069-0.73 (0-0.073%)	0.070-0.74 (0-0.074%)	0.068-0.73 (0-0.073%)	0.059-0.69 (0-0.069%)	0.062-0.72 (0-0.072%)	0.057-0.66 (0-0.066%)	0.067-0.72 (0-0.072%)	0.069-0.72 (0-0.072%)	0.066-0.71 (0-0.071%)
	High consumers	0.15-1.0 (0-0.10%)	0.15-1.0 (0-0.10%)	0.15-1.0 (0-0.10%)	0.15-1.1 (0-0.11%)	0.15-1.1 (0-0.11%)	0.15-1.0 (0-0.10%)	0.15-1.0 (0-0.10%)	0.15-1.0 (0-0.10%)	0.14-0.97 (0-0.097%)	0.15-1.0 (0-0.10%)	0.15-1.0 (0-0.10%)	0.15-1.0 (0-0.10%)
Isofetamid	Average consumers	0-0.024 (0%)	0-0.023 (0%)	0-0.025 (0-0.050%)	0-0.023 (0%)	0-0.023 (0%)	0-0.024 (0%)	0-0.020 (0%)	0-0.020 (0%)	0-0.021 (0%)	0-0.023 (0%)	0-0.022 (0%)	0-0.024 (0%)
	High consumers	0-0.035 (0-0.070%)	0-0.033 (0-0.066%)	0-0.037 (0-0.074%)	0-0.033 (0-0.066%)	0-0.032 (0-0.063%)	0-0.034 (0-0.068%)	0-0.031 (0-0.062%)	0-0.031 (0-0.062%)	0-0.032 (0-0.063%)	0-0.034 (0-0.068%)	0-0.032 (0-0.065%)	0-0.035 (0-0.071%)
Isopyrazam	Average consumers	0.00072-0.0051 (0%)	0.00073-0.0050 (0%)	0.00072-0.0051 (0%)	0.00078-0.0052 (0%)	0.00066-0.0051 (0%)	0.00089-0.0053 (0%)	0-0.0045 (0%)	0-0.0047 (0%)	0-0.0043 (0%)	0.00066-0.0050 (0%)	0.00063-0.0050 (0%)	0.00069-0.0050 (0%)
	High consumers	0-0.0067 (0%)	0-0.0065 (0%)	0.00051-0.0067 (0%)	0.00050-0.0070 (0%)	0-0.0070 (0%)	0.00057-0.0069 (0%)	0.00052-0.0064 (0%)	0-0.0067 (0%)	0.00053-0.0063 (0%)	0-0.0067 (0%)	0-0.0067 (0%)	0.00053-0.0067 (0%)

	Age-gender groups	Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)											
		Aged 18-49			Aged 50-64			Aged 65 or above			Aged 18 or above		
		All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Lufenuron	Average consumers	0.016-0.019 (0.078-0.097%)	0.013-0.016 (0.064-0.082%)	0.018-0.022 (0.090-0.11%)	0.019-0.023 (0.095-0.11%)	0.019-0.023 (0.093-0.11%)	0.019-0.023 (0.096-0.11%)	0.017-0.020 (0.083-0.10%)	0.017-0.020 (0.083-0.10%)	0.017-0.020 (0.083-0.10%)	0.017-0.020 (0.084-0.10%)	0.015-0.019 (0.076-0.095%)	0.018-0.022 (0.091-0.11%)
	High consumers	0.039-0.043 (0.20-0.21%)	0.027-0.031 (0.14-0.15%)	0.045-0.050 (0.23-0.25%)	0.044-0.047 (0.22-0.24%)	0.040-0.043 (0.20-0.22%)	0.045-0.048 (0.23-0.24%)	0.041-0.045 (0.20-0.22%)	0.041-0.046 (0.20-0.23%)	0.041-0.044 (0.20-0.22%)	0.040-0.044 (0.20-0.22%)	0.035-0.038 (0.18-0.19%)	0.045-0.049 (0.22-0.24%)
Maleic hydrazide	Average consumers	0.39-0.67 (0.13-0.22%)	0.43-0.69 (0.14-0.23%)	0.36-0.64 (0.12-0.21%)	0.15-0.43 (0-0.14%)	0.18-0.46 (0.059-0.15%)	0.12-0.40 (0-0.13%)	0.083-0.35 (0-0.12)	0.080-0.36 (0-0.12%)	0.085-0.34 (0-0.11%)	0.26-0.53 (0.086-0.18%)	0.28-0.56 (0.094-0.19%)	0.24-0.51 (0.078-0.17%)
	High consumers	1.2-1.5 (0.41-0.51%)	1.3-1.6 (0.44-0.53%)	1.1-1.4 (0.36-0.47%)	0.49-0.79 (0.16-0.26%)	0.55-0.90 (0.18-0.30%)	0.37-0.71 (0.12-0.24%)	0.26-0.58 (0.086-0.19%)	0.27-0.60 (0.090-0.20%)	0.24-0.55 (0.081-0.18%)	0.85-1.1 (0.28-0.38%)	0.92-1.2 (0.31-0.40%)	0.78-1.1 (0.26-0.36%)
Oxathiapiprolin	Average consumers	0.0034-0.38 (0%)	0.0023-0.37 (0%)	0.0043-0.38 (0%)	0.0034-0.38 (0%)	0.0027-0.38 (0%)	0.0040-0.38 (0%)	0.0039-0.36 (0%)	0.0028-0.37 (0%)	0.0049-0.35 (0%)	0.0035-0.37 (0%)	0.0025-0.37 (0%)	0.0043-0.38 (0%)
	High consumers	0.0058-0.52 (0%)	0.0048-0.51 (0%)	0.0066-0.53 (0%)	0.0061-0.54 (0%)	0.0055-0.55 (0%)	0.0066-0.53 (0%)	0.0061-0.52 (0%)	0.0054-0.53 (0%)	0.0072-0.50 (0%)	0.0059-0.53 (0%)	0.0050-0.53 (0%)	0.0067-0.52 (0%)
Pyraclostrobin	Average consumers	0.19-0.20 (0.65-0.66%)	0.17-0.17 (0.57-0.58%)	0.21-0.22 (0.72-0.73%)	0.25-0.25 (0.82-0.84%)	0.23-0.23 (0.76-0.77%)	0.26-0.27 (0.88-0.90%)	0.30-0.31 (1.0-1.0%)	0.28-0.28 (0.93-0.95%)	0.32-0.33 (1.1-1.1%)	0.23-0.24 (0.77-0.79%)	0.21-0.21 (0.70-0.71%)	0.25-0.26 (0.84-0.85%)
	High consumers	0.48-0.48 (1.6-1.6%)	0.42-0.42 (1.4-1.4%)	0.52-0.53 (1.7-1.8%)	0.61-0.61 (2.0-2.0%)	0.54-0.55 (1.8-1.8%)	0.65-0.65 (2.2-2.2%)	0.70-0.71 (2.3-2.4%)	0.67-0.67 (2.2-2.2%)	0.74-0.74 (2.5-2.5%)	0.56-0.56 (1.9-1.9%)	0.52-0.52 (1.7-1.7%)	0.61-0.62 (2.0-2.1%)
Pyriproxyfen	Average consumers	0.00057-0.0049 (0%)	0.00060-0.0049 (0%)	0.00054-0.0050 (0%)	0.00049-0.0050 (0%)	0-0.0049 (0%)	0.00062-0.0051 (0%)	0-0.0047 (0%)	0.00051-0.0049 (0%)	0-0.0045 (0%)	0.00052-0.0049 (0%)	0.00051-0.0049 (0%)	0.00054-0.0049 (0%)
	High consumers	0.0010-0.0071 (0%)	0.0010-0.0070 (0%)	0.00094-0.0072 (0%)	0.00099-0.0072 (0%)	0.00067-0.0071 (0%)	0.0014-0.0073 (0%)	0.00081-0.0069 (0%)	0.00078-0.0071 (0%)	0.00087-0.0064 (0%)	0.00097-0.0071 (0%)	0.00092-0.0070 (0%)	0.0010-0.0071 (0%)

- Pesticide residues with detectable levels are presented.
- Exposure estimates of high consumers refer to the exposure estimates at 90th percentile.
- Figures for dietary exposure estimates and contributions to HBGVs were rounded to two significant figures.
- Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates while values of "0%" denote < 0.05% of contribution to HBGVs.
- Lower bound and upper bound values are presented in a range.

Table F.2: Younger population

	Age-gender groups	Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)							
		Aged 6-11		Aged 12-17					
				All		Male		Female	
Neonicotinoids (Neonics)									
Acetamiprid (ACE)	Average consumers	0.097-0.11	(0.14-0.15%)	0.059-0.065	(0.085-0.093%)	0.063-0.069	(0.090-0.098%)	0.055-0.061	(0.079-0.087%)
	High consumers	0.24-0.25	(0.35-0.36%)	0.16-0.16	(0.22-0.23%)	0.17-0.18	(0.24-0.25%)	0.14-0.14	(0.20-0.20%)
Clothianidin (CLO)	Average consumers	0.054-0.060	(0.054-0.060%)	0.039-0.043	(0%)	0.035-0.039	(0%)	0.044-0.048	(0%)
	High consumers	0.084-0.090	(0.084-0.090%)	0.065-0.070	(0.065-0.070%)	0.057-0.063	(0.057-0.063%)	0.072-0.076	(0.072-0.076%)
Dinotefuran (DIN)	Average consumers	0.059-0.11	(0-0.057%)	0.040-0.077	(0%)	0.039-0.077	(0%)	0.041-0.076	(0%)
	High consumers	0.14-0.21	(0.069-0.10%)	0.096-0.14	(0-0.070%)	0.086-0.13	(0-0.066%)	0.11-0.14	(0.056-0.072%)
Flupyradifurone (FLU)	Average consumers	0.056-0.17	(0.070-0.22%)	0.037-0.12	(0-0.15%)	0.035-0.12	(0-0.15%)	0.039-0.12	(0-0.15%)
	High consumers	0.14-0.28	(0.17-0.35%)	0.078-0.19	(0.098-0.23%)	0.075-0.18	(0.093-0.23%)	0.084-0.19	(0.11-0.23%)
Imidacloprid (IMI)	Average consumers	0.077-0.20	(0.15-0.40%)	0.051-0.13	(0.10-0.27%)	0.047-0.13	(0.095-0.27%)	0.054-0.13	(0.11-0.27%)
	High consumers	0.18-0.32	(0.36-0.65%)	0.11-0.22	(0.22-0.44%)	0.11-0.22	(0.21-0.43%)	0.11-0.22	(0.23-0.44%)
Imidaclothiz (IMID)	Average consumers	0-0.0078	(0%)	0-0.0052	(0%)	0-0.0054	(0%)	0-0.0050	(0%)
	High consumers	0-0.011	(0%)	0-0.0075	(0%)	0-0.0078	(0%)	0-0.0072	(0%)
Nitenpyram (NIT)	Average consumers	0.0042-0.024	(0%)	0.0028-0.016	(0%)	0.0027-0.017	(0%)	0.0028-0.016	(0%)
	High consumers	0.010-0.036	(0%)	0.0076-0.025	(0%)	0.0062-0.025	(0%)	0.0086-0.025	(0%)
Sulfoxaflor (SUL)	Average consumers	0.0028-0.042	(0-0.084%)	0.0014-0.028	(0-0.056%)	0.0011-0.028	(0-0.057%)	0.0018-0.027	(0-0.054%)
	High consumers	0.0072-0.060	(0-0.12%)	0.0038-0.040	(0-0.080%)	0.0029-0.041	(0-0.081%)	0.0043-0.038	(0-0.077%)
Thiacloprid (THIA)	Average consumers	0.0014-0.0088	(0-0.088%)	0.00087-0.0057	(0-0.057%)	0.00091-0.0060	(0-0.060%)	0.00083-0.0055	(0-0.055%)
	High consumers	0.0039-0.013	(0-0.13%)	0.0025-0.0088	(0-0.088%)	0.0026-0.0091	(0-0.091%)	0.0022-0.083	(0-0.083%)
Thiamethoxam (THI)	Average consumers	0.14-0.16	(0.17-0.20%)	0.11-0.12	(0.14-0.15%)	0.11-0.12	(0.13-0.15%)	0.11-0.12	(0.14-0.15%)
	High consumers	0.38-0.40	(0.48-0.50%)	0.31-0.32	(0.39-0.40%)	0.31-0.32	(0.39-0.40%)	0.30-0.32	(0.38-0.40%)
Organophosphorus pesticides (OPPs)									
Acephate	Average consumers	0.0021-0.64	(0-2.1%)	0.0010-0.43	(0-1.4%)	0.0010-0.44	(0-1.5%)	0.0011-0.41	(0-1.4%)
	High consumers	0.0042-0.90	(0-3.0%)	0.0016-0.61	(0-2.0%)	0.0013-0.63	(0-2.1%)	0.0022-0.58	(0-1.9%)
Chlorpyrifos	Average consumers	0.0043-0.011	(0-0.11%)	0.0037-0.0084	(0-0.084%)	0.0032-0.0081	(0-0.081%)	0.0042-0.0088	(0-0.088%)
	High consumers	0.0086-0.017	(0.086-0.17%)	0.0077-0.013	(0.077-0.13%)	0.0064-0.012	(0.064-0.12%)	0.0096-0.015	(0.096-0.15%)
Chlorpyrifos methyl	Average consumers	0.0011-0.021	(0-0.21%)	0-0.014	(0-0.14%)	0.00055-0.015	(0-0.15%)	0-0.013	(0-0.13%)
	High consumers	0.0033-0.030	(0-0.30%)	0.0018-0.020	(0-0.20%)	0.0019-0.021	(0-0.21%)	0.0017-0.020	(0-0.20%)
Diazinon	Average consumers	0-0.0079	(0-0.26%)	0-0.0053	(0-0.18%)	0-0.0055	(0-0.18%)	0-0.0051	(0-0.17%)
	High consumers	0.00075-0.011	(0-0.37%)	0.00084-0.0076	(0-0.25%)	0.0010-0.0079	(0-0.26%)	0-0.0073	(0-0.24%)
Dichlorvos	Average consumers	0.00077-0.041	(0-1.0%)	0.00074-0.027	(0-0.68%)	0.00072-0.028	(0-0.71%)	0.00077-0.026	(0-0.66%)
	High consumers	0.0022-0.058	(0.054-1.4%)	0.0024-0.039	(0.059-0.97%)	0.0019-0.040	(0-1.0%)	0.0026-0.038	(0.066-0.94%)

	Age-gender groups	Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)							
		Aged 6-11		Aged 12-17					
				All		Male		Female	
Dimethoate	Average consumers	0.0036-0.030	(0.36-3.0%)	0.0016-0.019	(0.16-1.9%)	0.0012-0.020	(0.12-2.0%)	0.0020-0.019	(0.20-1.9%)
	High consumers	0.0058-0.045	(0.58-4.5%)	0.0020-0.028	(0.20-2.8%)	0.0019-0.029	(0.19-2.9%)	0.0021-0.027	(0.21-2.7%)
Disulfoton	Average consumers	0-0.073	(0-24%)	0-0.049	(0-16%)	0-0.051	(0-17%)	0-0.047	(0-16%)
	High consumers	0-0.10	(0-34%)	0-0.071	(0-24%)	0-0.073	(0-24%)	0-0.069	(0-23%)
Edifenphos	Average consumers	0-0.0077	(0-0.26%)	0-0.0051	(0-0.17%)	0-0.0053	(0-0.18%)	0-0.0050	(0-0.17%)
	High consumers	0-0.011	(0-0.36%)	0-0.0074	(0-0.25%)	0-0.0077	(0-0.26%)	0-0.0071	(0-0.24%)
Ethion	Average consumers	0-0.0079	(0-0.40%)	0-0.0054	(0-0.27%)	0-0.0056	(0-0.28%)	0-0.0052	(0-0.26%)
	High consumers	0.00058-0.011	(0-0.56%)	0.00086-0.0078	(0-0.39%)	0.00080-0.0080	(0-0.40%)	0.00090-0.0076	(0-0.38%)
Fenthion	Average consumers	0.0052-0.11	(0.074-1.5%)	0.0039-0.072	(0.055-1.0%)	0.0037-0.074	(0.052-1.1%)	0.0041-0.070	(0.058-1.0%)
	High consumers	0.019-0.15	(0.28-2.2%)	0.0086-0.11	(0.12-1.5%)	0.0079-0.11	(0.11-1.6%)	0.011-0.10	(0.16-1.5%)
Fosthiazate	Average consumers	0.0015-0.0091	(0-0.23%)	0.0012-0.0062	(0-0.16%)	0.0010-0.0062	(0-0.16%)	0.0014-0.0062	(0-0.16%)
	High consumers	0.0033-0.014	(0.082-0.34%)	0.0028-0.0097	(0.070-0.24%)	0.0025-0.0094	(0.063-0.24%)	0.0033-0.0099	(0.084-0.25%)
Isocarbophos	Average consumers	0.0010-0.0087	(0-0.29%)	0.00076-0.0059	(0-0.20%)	0.00074-0.0061	(0-0.20%)	0.00077-0.0057	(0-0.19%)
	High consumers	0.0031-0.013	(0.10-0.43%)	0.0021-0.0088	(0.070-0.29%)	0.0020-0.0090	(0.067-0.30%)	0.0022-0.0087	(0.072-0.29%)
Malathion	Average consumers	0.00076-0.0083	(0%)	0-0.0054	(0%)	0-0.0056	(0%)	0-0.0053	(0%)
	High consumers	0.0017-0.012	(0%)	0.00074-0.0079	(0%)	0.00070-0.0082	(0%)	0.00090-0.0076	(0%)
Methamidophos	Average consumers	0-0.080	(0-2.0%)	0-0.054	(0-1.3%)	0-0.055	(0-1.4%)	0-0.052	(0-1.3%)
	High consumers	0-0.11	(0-2.8%)	0-0.077	(0-1.9%)	0-0.078	(0-2.0%)	0-0.073	(0-1.8%)
Methidathion	Average consumers	0-0.020	(0-1.0%)	0-0.014	(0-0.68%)	0-0.014	(0-0.71%)	0-0.013	(0-0.66%)
	High consumers	0-0.029	(0-1.4%)	0-0.020	(0-0.99%)	0-0.020	(0-1.0%)	0-0.019	(0-0.95%)
Phorate	Average consumers	0-0.073	(0-10%)	0-0.049	(0-7.0%)	0-0.051	(0-7.3%)	0-0.047	(0-6.7%)
	High consumers	0.00088-0.10	(0.13-15%)	0.00064-0.071	(0.092-10%)	0.00066-0.073	(0.094-10%)	0.00060-0.069	(0.086-9.9%)
Phoxim	Average consumers	0.0056-0.013	(0.14-0.33%)	0.0036-0.0086	(0.091-0.21%)	0.0035-0.0086	(0.088-0.22%)	0.0038-0.0085	(0.094-0.21%)
	High consumers	0.014-0.022	(0.35-0.55%)	0.0087-0.014	(0.22-0.35%)	0.0082-0.014	(0.21-0.35%)	0.0088-0.014	(0.22-0.36%)
Pirimiphos methyl	Average consumers	0.0022-0.0093	(0%)	0.0014-0.0061	(0%)	0.0015-0.0064	(0%)	0.0013-0.0059	(0%)
	High consumers	0.0048-0.013	(0%)	0.0032-0.0093	(0%)	0.0034-0.0096	(0%)	0.0028-0.0086	(0%)
Profenofos	Average consumers	0.0022-0.0098	(0%)	0.0018-0.0069	(0%)	0.0017-0.0070	(0%)	0.0019-0.0068	(0%)
	High consumers	0.0072-0.015	(0-0.051%)	0.0045-0.011	(0%)	0.0045-0.011	(0%)	0.0053-0.011	(0%)
Triazophos	Average consumers	0-0.0078	(0-0.78%)	0-0.0052	(0-0.52%)	0-0.0054	(0-0.54%)	0-0.0050	(0-0.50%)
	High consumers	0-0.011	(0-1.1%)	0-0.0075	(0-0.75%)	0-0.0078	(0-0.78%)	0-0.0072	(0-0.72%)
Trichlorfon	Average consumers	0-0.020	(0-1.0%)	0-0.014	(0-0.68%)	0-0.014	(0-0.71%)	0-0.013	(0-0.66%)
	High consumers	0-0.029	(0-1.4%)	0-0.020	(0-0.99%)	0-0.020	(0-1.0%)	0-0.019	(0-0.95%)
Carbamates									
Carbaryl	Average consumers	0-0.0078	(0-0.098%)	0-0.0053	(0-0.066%)	0-0.0055	(0-0.069%)	0-0.0051	(0-0.064%)
	High consumers	0-0.011	(0-0.14%)	0-0.0075	(0-0.094%)	0.00053-0.0079	(0-0.099%)	0-0.0074	(0-0.092%)
Carbosulfan	Average consumers	0.0072-0.17	(0.072-1.7%)	0.0056-0.11	(0.056-1.1%)	0.0053-0.12	(0.053-1.2%)	0.0059-0.11	(0.059-1.1%)
	High consumers	0.027-0.24	(0.27-2.4%)	0.013-0.17	(0.13-1.7%)	0.011-0.17	(0.11-1.7%)	0.015-0.16	(0.15-1.6%)

	Age-gender groups	Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)							
		Aged 6-11		Aged 12-17					
				All		Male		Female	
Fenobucarb (BPMC)	Average consumers	0-0.0077	(0%)	0-0.0052	(0%)	0-0.0053	(0%)	0-0.0050	(0%)
	High consumers	0-0.011	(0%)	0-0.0074	(0%)	0-0.0077	(0%)	0-0.0072	(0%)
Isoprocarb	Average consumers	0.0010-0.021	(0.051-1.1%)	0.00099-0.015	(0.050-0.73%)	0.00097-0.015	(0-0.75%)	0.0010-0.014	(0.051-0.71%)
	High consumers	0.0014-0.031	(0.069-1.5%)	0.0022-0.021	(0.11-1.1%)	0.0020-0.022	(0.10-1.1%)	0.0026-0.021	(0.13-1.0%)
Methomyl	Average consumers	0.0020-0.017	(0-0.083%)	0.0014-0.011	(0-0.056%)	0.00091-0.011	(0-0.055%)	0.0018-0.011	(0-0.056%)
	High consumers	0.0034-0.024	(0-0.12%)	0.0026-0.017	(0-0.083%)	0.0019-0.016	(0-0.080%)	0.0044-0.017	(0-0.087%)
Oxamyl	Average consumers	0.0012-0.022	(0-0.24%)	0.0011-0.015	(0-0.16%)	0.0011-0.015	(0-0.17%)	0.0011-0.014	(0-0.16%)
	High consumers	0.0041-0.031	(0-0.34%)	0.0037-0.021	(0-0.24%)	0.0036-0.021	(0-0.24%)	0.0039-0.021	(0-0.23%)
Pirimicarb	Average consumers	0-0.046	(0-0.23%)	0-0.031	(0-0.16%)	0-0.032	(0-0.16%)	0-0.030	(0-0.15%)
	High consumers	0-0.064	(0-0.32%)	0-0.045	(0-0.23%)	0-0.047	(0-0.23%)	0-0.044	(0-0.22%)
Propamocarb	Average consumers	0.13-0.14	(0%)	0.086-0.090	(0%)	0.080-0.084	(0%)	0.092-0.097	(0%)
	High consumers	0.28-0.28	(0.069-0.071%)	0.19-0.20	(0%)	0.17-0.18	(0%)	0.21-0.21	(0.052-0.054%)
Dithiocarbamate (DTC) metabolites									
N,N'-Dimethylthiourea (DMTU)	Average consumers	0-0.020	(0-2.0%)	0-0.014	(0-1.4%)	0-0.014	(0-1.4%)	0-0.013	(0-1.3%)
	High consumers	0-0.029	(0-2.9%)	0-0.020	(0-2.0%)	0-0.020	(0-2.0%)	0-0.019	(0-1.9%)
Ethylene thiourea (ETU)	Average consumers	0.016-0.055	(0.40-1.4%)	0.012-0.038	(0.30-0.95%)	0.012-0.039	(0.29-0.97%)	0.012-0.037	(0.31-0.94%)
	High consumers	0.042-0.086	(1.0-2.1%)	0.033-0.062	(0.84-1.5%)	0.033-0.062	(0.84-1.5%)	0.034-0.062	(0.85-1.5%)
Propylene thiourea (PTU)	Average consumers	0.00065-0.037	(0.22-12%)	0-0.025	(0.14-8.3%)	0-0.026	(0.15-8.6%)	0-0.024	(0.14-8.0%)
	High consumers	0.0019-0.052	(0.65-17%)	0.0013-0.036	(0.44-12%)	0.0012-0.037	(0.42-12%)	0.0014-0.035	(0.46-12%)
Other pesticides									
Ametoctradin	Average consumers	0.036-0.12	(0%)	0.024-0.075	(0%)	0.021-0.074	(0%)	0.026-0.076	(0%)
	High consumers	0.026-0.15	(0%)	0.024-0.11	(0%)	0.021-0.10	(0%)	0.033-0.11	(0%)
Bixafen	Average consumers	0-0.016	(0-0.078%)	0-0.010	(0-0.052%)	0-0.011	(0-0.054%)	0-0.010	(0-0.050%)
	High consumers	0-0.022	(0-0.11%)	0-0.015	(0-0.076%)	0-0.016	(0-0.078%)	0-0.015	(0-0.073%)
Cyantraniliprole	Average consumers	0-0.0080	(0%)	0-0.0053	(0%)	0-0.0055	(0%)	0-0.0052	(0%)
	High consumers	0.0012-0.011	(0%)	0.00077-0.0076	(0%)	0.00074-0.0080	(0%)	0.00083-0.0073	(0%)
Cyazofamid	Average consumers	0.036-0.073	(0%)	0.031-0.056	(0%)	0.030-0.056	(0%)	0.032-0.056	(0%)
	High consumers	0.11-0.15	(0.057-0.077%)	0.096-0.12	(0-0.061%)	0.087-0.12	(0-0.059%)	0.10-0.12	(0.050-0.062%)
Cyflumetofen	Average consumers	0.0017-0.51	(0-0.51%)	0.00061-0.34	(0-0.34%)	0.00059-0.35	(0-0.35%)	0.00064-0.33	(0-0.33%)
	High consumers	0.0017-0.71	(0-0.71%)	0-0.49	(0-0.49%)	0-0.50	(0-0.50%)	0.00071-0.46	(0-0.46%)
Ethephon	Average consumers	0.071-0.27	(0.14-0.54%)	0.030-0.16	(0.060-0.32%)	0.026-0.16	(0.051-0.33%)	0.035-0.16	(0.069-0.32%)
	High consumers	0.21-0.44	(0.43-0.87%)	0.11-0.26	(0.22-0.52%)	0.092-0.25	(0.18-0.51%)	0.12-0.27	(0.25-0.54%)
Fenazaquin	Average consumers	0-0.0077	(0%)	0-0.0051	(0%)	0-0.0053	(0%)	0-0.0050	(0%)
	High consumers	0-0.011	(0%)	0-0.0074	(0%)	0-0.0077	(0%)	0-0.0071	(0%)
Fenpyrazamine	Average consumers	0-0.0077	(0%)	0-0.0052	(0%)	0-0.0053	(0%)	0-0.0050	(0%)
	High consumers	0-0.011	(0%)	0-0.0074	(0%)	0-0.0077	(0%)	0-0.0071	(0%)

	Age-gender groups	Dietary Exposure Estimates (μg/kg bw/day) (% contribution to HBGVs)							
		Aged 6-11		Aged 12-17					
				All		Male		Female	
Fipronil	Average consumers	0.0034-0.068	(1.7-34%)	0.0022-0.045	(1.1-23%)	0.0021-0.047	(1.1-23%)	0.023-0.044	(1.2-22%)
	High consumers	0.0071-0.096	(3.6-48%)	0.0048-0.065	(2.4-32%)	0.0042-0.067	(2.1-34%)	0.0054-0.063	(2.7-31%)
Fluxapyroxad	Average consumers	0.014-0.021	(0.071-0.11%)	0.0089-0.014	(0-0.068%)	0.0085-0.013	(0-0.067%)	0.0092-0.014	(0-0.069%)
	High consumers	0.033-0.040	(0.16-0.20%)	0.021-0.026	(0.10-0.13%)	0.021-0.025	(0.10-0.12%)	0.022-0.027	(0.11-0.13%)
Fosetyl aluminium	Average consumers	8.2-8.8	(0.82-0.88%)	5.1-5.6	(0.51-0.56%)	5.2-5.7	(0.52-0.57%)	5.0-5.4	(0.50-0.54%)
	High consumers	13-13	(1.3-1.3%)	8.3-8.9	(0.83-0.89%)	8.4-9.0	(0.84-0.90%)	8.2-8.7	(0.82-0.87%)
Glufosinate ammonium	Average consumers	0.016-0.52	(0.16-5.2%)	0.0085-0.34	(0.085-3.4%)	0.0069-0.35	(0.069-3.5%)	0.010-0.33	(0.10-3.3%)
	High consumers	0.044-0.73	(0.44-7.3%)	0.024-0.49	(0.24-4.9%)	0.022-0.52	(0.22-5.2%)	0.027-0.48	(0.27-4.8%)
Glyphosate	Average consumers	0.12-1.3	(0-0.13%)	0.078-0.84	(0-0.084%)	0.083-0.87	(0-0.087%)	0.073-0.80	(0-0.080%)
	High consumers	0.24-1.7	(0-0.17%)	0.17-1.2	(0-0.12%)	0.17-1.2	(0-0.12%)	0.17-1.2	(0-0.12%)
Isofetamid	Average consumers	0-0.044	(0-0.089%)	0-0.029	(0-0.057%)	0-0.030	(0-0.059%)	0-0.028	(0-0.055%)
	High consumers	0.00061-0.065	(0-0.13%)	0-0.041	(0-0.082%)	0-0.042	(0-0.085%)	0-0.040	(0-0.080%)
Isopyrazam	Average consumers	0.00082-0.0084	(0%)	0-0.0055	(0%)	0-0.0057	(0%)	0-0.0052	(0%)
	High consumers	0.00076-0.012	(0%)	0-0.0078	(0%)	0-0.0079	(0%)	0-0.0076	(0%)
Lufenuron	Average consumers	0.026-0.033	(0.13-0.16%)	0.016-0.021	(0.081-0.10%)	0.017-0.022	(0.087-0.11%)	0.015-0.019	(0.075-0.096%)
	High consumers	0.061-0.068	(0.31-0.34%)	0.038-0.044	(0.19-0.22%)	0.042-0.049	(0.21-0.24%)	0.033-0.038	(0.17-0.19%)
Maleic hydrazide	Average consumers	0.90-1.4	(0.30-0.46%)	0.61-0.93	(0.20-0.31%)	0.63-0.96	(0.21-0.32%)	0.58-0.89	(0.19-0.30%)
	High consumers	2.7-3.2	(0.89-1.1%)	1.8-2.1	(0.59-0.71%)	1.8-2.2	(0.59-0.72%)	1.8-2.1	(0.62-0.70%)
Oxathiapiprolin	Average consumers	0.0051-0.65	(0%)	0.0037-0.43	(0%)	0.0033-0.45	(0%)	0.0041-0.42	(0%)
	High consumers	0.0077-0.91	(0%)	0.0068-0.62	(0%)	0.0060-0.63	(0%)	0.0082-0.59	(0%)
Pyraclostrobin	Average consumers	0.25-0.26	(0.84-0.86%)	0.15-0.15	(0.50-0.51%)	0.16-0.16	(0.52-0.53%)	0.14-0.15	(0.48-0.49%)
	High consumers	0.65-0.66	(2.2-2.2%)	0.40-0.40	(1.3-1.3%)	0.42-0.42	(1.4-1.4%)	0.38-0.38	(1.3-1.3%)
Pyriproxyfen	Average consumers	0.0011-0.0086	(0%)	0.00070-0.0058	(0%)	0.00065-0.0059	(0%)	0.00075-0.0056	(0%)
	High consumers	0.0022-0.013	(0%)	0.0016-0.0087	(0%)	0.0012-0.0088	(0%)	0.0018-0.0085	(0%)

- Pesticide residues with detectable levels are presented.
- Exposure estimates of high consumers refer to the exposure estimates at 90th percentile.
- Figures for dietary exposure estimates and contributions to HBGVs were rounded to two significant figures.
- Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates while values of "0%" denote < 0.05% of contribution to HBGVs.
- Lower bound and upper bound values are presented in a range.

Appendix G

A Comparison of dietary exposure estimates to pesticide or metabolite residues locally and reported in other places

Table G.1: Neonicotinoids (Neonics)

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB) [e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Acetamiprid (ACE)	Average consumers	0.088-0.092 (0.13-0.13%)	0.078-0.085 (0.11-0.12%)	0.00086 (<1%)	0.00057-0.0013 (<1%)	<0.0001-0.0001 (<0.0001-0.0001%)	<0.0001 (0.0001%)	– (0.0-0.1%)	– (0.0-0.2%)	0.14035 (0.20%)[f]
	High consumers	0.21-0.22 (0.30-0.31%)	0.21-0.22 (0.30-0.31%)	0.0019 (<1%)	0.0014-0.0025 (<1%)	NA	NA	– (0.0-0.2%)	– (0.0-0.3%)	NA
Clothianidin (CLO)	Average consumers	0.032-0.035 (0%)	0.047-0.052 (0-0.052%)	NA	NA	NA	NA	NA	NA	0.02288 (0.02%)
	High consumers	0.050-0.053 (0.050-0.053%)	0.076-0.082 (0.076-0.082%)							NA
Dinotefuran (DIN)	Average consumers	0.039-0.069 (0%)	0.050-0.0096 (0%)	NA	NA	NA	NA	NA	NA	0.001217 (0.00%)
	High consumers	0.082-0.12 (0-0.059%)	0.12-0.18 (0.061-0.089%)							NA
Imidacloprid (IMI)	Average consumers	0.046-0.12 (0.093-0.24%)	0.064-0.17 (0.13-0.34%)	0.014 (<1%)	0.013-0.020 (<1%)	0.0025-0.0034 (0.004-0.006%)	0.0042-0.0043 (0.007-0.007%)	(0.0-0.0%)	(0.0-0.1%)	0.03350 (0.06%)
	High consumers	0.095-0.18 (0.19-0.37%)	0.15-0.29 (0.31-0.58%)	0.031 (<1%)	0.034-0.053 (<1%)	NA	NA	(0.0-0.1%)	(0.0-0.1%)	NA
Imidaclothiz (IMID)	Average consumers	0-0.0045 (0%)	0-0.0065 (0%)	NA	NA	NA	NA	NA	NA	0.000242 (0.00%)
	High consumers	0-0.0064 (0%)	0-0.010 (0%)							NA
Nitenpyram (NIT)	Average consumers	0.0016-0.013 (0%)	0.0035-0.020 (0%)	NA	NA	NA	NA	NA	NA	0.001762 (0.00%)
	High consumers	0.0039-0.019 (0%)	0.0093-0.032 (0%)							NA
Sulfoxaflor (SUL)	Average consumers	0.0012-0.024 (0%)	0.0021-0.035 (0-0.070%)	NA	NA	0.0024-0.0038 (0.009-0.014%)	0.0047-0.0052 (0.017-0.019%)	NA	NA	NA
	High consumers	0.0031-0.034 (0-0.068%)	0.0056-0.054 (0-0.11%)			NA	NA			

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB) [e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Thiacloprid (THIA)	Average consumers	0.0010-0.0051 (0-0.051%)	0.0011-0.0073 (0-0.073%)	NA	NA	0.0002-0.0003 (0.002-0.003%)	0.0004-0.0005 (0.004-0.005%)	NA	NA	0.000442 (0.00%)
	High consumers	0.0028-0.0077 (0-0.077%)	0.0032-0.012 (0-0.12%)			NA	NA			NA
Thiamethoxam (THI)	Average consumers	0.095-0.11 (0.12-0.13%)	0.12-0.14 (0.16-0.18%)	NA	NA	0.0001 (0.0001%)	0.0000-0.0001 (0.0000-0.0001%)	NA	NA	0.04257 (0.05%)
	High consumers	0.23-0.25 (0.29-0.31%)	0.35-0.37 (0.43-0.47%)			NA	NA			NA

a Data (only pesticide residues with detectable levels and similar data identified from other places) are extracted from the current Study. (No relevant data from other places were identified for flupyradifurone.) Figures for dietary exposure estimates and contributions to HBGVs are rounded to two significant figures. Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates and < 0.05% of contribution to HBGVs. The 90th percentile of dietary exposure estimates for high consumers.

b Australia (25th ATDS 2019): Dietary exposure estimates of population group aged 6-18 are presented in a range for children aged 6-12 years and teenagers aged 13-18 years. The 90th percentile of dietary exposure estimates for high consumers.

c New Zealand (2016 NZTDS): Dietary exposure estimates of population group aged 19+ are presented in a range among adult females (25 years and over), adult males (25 years and over) and young adult males (19-24 years), those of population group aged 11-14 are presented in range for teenage boys (11-14 years) and teenage girls (11-14 years).

d France (2nd French TDS (2011)): Only % of HBGV. The 95th percentile of dietary exposure estimates for high consumers. HBGVs adopted may not be the same as those of our current Study.

e Chinese Mainland (6th CTDS)(MB): Dietary exposure estimates for the average Chinese adult males (aged 18-45) are presented.

f Exposure at 0.010735 μg/kg bw/day to its metabolite, acetamiprid-N-desmethyl was reported separately under 6th CTDS.

LB, MB and UB denote lower bound and middle bound and upper bound respectively.

"—" denotes not detected in all samples.

"NA" denotes that data are not available.

Table G.2: Organophosphorus pesticides (OPPs)

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB) [e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Acephate	Average consumers	0.00074-0.37 (0-1.2%)	0.0016-0.54 (0-1.8%)	0.0070 (<1%)	0.0067-0.012 (<1%)	0.0007-0.0016 (0.06-0.13%)	0.0007-0.0009 (0.06-0.08%)	– (0.0-1.4%)	– (0.0-1.4%)	0.007194 (0.02%)
	High consumers	0.00082-0.52 (0-1.7%)	0.0027-0.81 (0-2.7%)	0.015 (<1%)	0.016-0.025 (<1%)	NA	NA	– (0.0-2.5%)	– (0.0-2.8%)	NA
Chlorpyrifos	Average consumers	0.0030-0.0071 (0-0.071%)	0.0040-0.0099 (0-0.099%)	0.021 (<1%)	0.025-0.062 (<1-2%)	0.001-0.0016 (0.03-0.05%)	0.0021-0.0023 (0.07-0.08%)	(0.1-1.4%)	(0.1-1.5%)	0.04799 (0.48%)
	High consumers	0.0063-0.011 (0.063-0.11%)	0.0082-0.016 (0.082-0.16%)	0.053 (2%)	0.065-0.14 (2-5%)	NA	NA	(0.5-2.6%)	(0.4-3.0%)	NA
Chlorpyrifos methyl	Average consumers	0-0.012 (0-0.12%)	0.00078-0.018 (0-0.18%)	0.047 (<1%)	0.076-0.13 (<1-1%)	0.054-0.080 (0.5-0.8%)	0.10-0.14 (1.0-1.4%)	(0.0-1.3%)	(0.1-1.5%)	–
	High consumers	0.0016-0.017 (0-0.17%)	0.0027-0.027 (0-0.27%)	0.087 (<1%)	0.13-0.24 (1-2%)	NA	NA	(0.1-2.3%)	(0.2-3.0%)	
Diazinon	Average consumers	0-0.0045 (0-0.15%)	0-0.0066 (0-0.22%)	0.0048 (<1%)	0.0024-0.0035 (<1%)	–	–	(0.0-66.7%)	(0.0-82.1%)	0.000012 (0.00%)
	High consumers	0-0.0064 (0-0.21%)	0.00082-0.010 (0-0.34%)	0.010 (1%)	0.0048-0.0062 (<1%)			(0.1-112.3%)	(0.1-157.4%)	NA
Dichlorvos	Average consumers	0.0022-0.025 (0.056-0.62%)	0.00076-0.034 (0-0.85%)	–	–	–	–	(0.0-7.5%)	(0.0-8.6%)	0.039306 (0.98%)
	High consumers	0.0082-0.035 (0.20-0.87%)	0.0023-0.051 (0.058-1.3%)					(0.0-13.3%)	(0.0-17.0%)	NA
Dimethoate	Average consumers	0.0017-0.017 (0.17-1.7%)	0.0026-0.025 (0.26-2.5%)	0.0014 (<1%)	0.0012-0.0020 (<1%)	0.0011-0.0015 (0.11-0.15%)	0.0007-0.0014 (0.07-0.14%)	(1.8-123.9%)	(2.0-120.4%)	0.024743 (1.24%)[f]
	High consumers	0.0022-0.024 (0.22-2.4%)	0.0033-0.039 (0.33-3.9%)	0.0032 (<1%)	0.0025-0.0043 (<1%)	NA	NA	(4.3-234.9%)	(2.5-251.3%)	NA
Disulfoton	Average consumers	0-0.042 (0-14%)	0-0.061 (0-20%)	NA	NA	–	–	– (0.0-58.0%)	– (0.0-51.1%)	NA
	High consumers	0-0.060 (0-20%)	0-0.093 (0-31%)					– (0.0-112.7%)	– (0.0-119.5%)	

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB) [e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Edifenphos	Average consumers	0-0.0044 (0-0.15%)	0-0.0065 (0-0.22%)	NA	NA	—	—	NA	NA	NA
	High consumers	0-0.0063 (0-0.21%)	0-0.0098 (0-0.33%)							
Ethion	Average consumers	0-0.0045 (0-0.23%)	0-0.0067 (0-0.34%)	—	—	—	—	(0.1-5.8%)	(0.1-6.9%)	NA
	High consumers	0-0.0065 (0-0.32%)	0.00069-0.010 (0-0.50%)					(0.2-10.1%)	(0.2-13.7%)	
Fenthion	Average consumers	0.0028-0.061 (0-0.88%)	0.0045-0.090 (0.065-1.3%)	0.015 (<1%)	0.0094-0.035 (<1-2%)	—	—	— (0.0-3.5%)	— (0.0-4.1%)	NA
	High consumers	0.0029-0.089 (0-1.3%)	0.013-0.14 (0.19-2.0%)	0.034 (2%)	0.024-0.065 (1-3%)			— (0.0-6.1%)	— (0.0-8.1%)	
Malathion	Average consumers	0-0.0047 (0%)	0.00058-0.0069 (0%)	0.00098 (<1%)	0.0014-0.0021 (<1%)	0.0002-0.0003 (0.001-0.002%)	0.0004-0.0007 (0.002-0.003%)	(0.0-0.7%)	(0.0-0.7%)	NA
	High consumers	0.00064-0.0066 (0%)	0.0011-0.011 (0%)	0.0022 (<1%)	0.0024-0.0047 (<1%)	NA	NA	(0.0-1.2%)	(0.0-1.4%)	
Methamidophos	Average consumers	0-0.046 (0-1.2%)	0-0.067 (0-1.7%)	0.0059 (2%)	0.0048-0.0072 (2-2%)	0.0003-0.0004 (0.35-0.38%)	0.0004-0.0005 (0.36-0.46%)	— (0.0-36.2%)	— (0.0-33.4%)	0.000012 (0.00%)
	High consumers	0-0.065 (0-1.6%)	0-0.10 (0-2.5%)	0.014 (5%)	0.012-0.015 (4-5%)	NA	NA	— (0.0-68.7%)	— (0.0-72.5%)	NA
Methidathion	Average consumers	0-0.012 (0-0.59%)	0-0.017 (0-0.86%)	—	—	—	—	— (0.0-24.3%)	— (0.0-27.5%)	NA
	High consumers	0-0.017 (0-0.84%)	0-0.026 (0-1.3%)					— (0.0-42.7%)	— (0.0-52.5%)	
Phorate	Average consumers	0-0.042 (0-6.0%)	0-0.062 (0-8.8%)	—	—	—	—	— (0.0-104.6%)	— (0.0-148.9%)	NA
	High consumers	0-0.060 (0.068-8.6%)	0.00076-0.094 (0.11-13%)					— (0.0-171.8%)	— (0.0-289.5%)	
Phoxim	Average consumers	0.0069-0.011 (0.17-0.28%)	0.0047-0.011 (0.12-0.27%)	NA	NA	NA	NA	— (0.0-1.1%)	— (0.0-1.2%)	NA
	High consumers	0.018-0.022 (0.44-0.56%)	0.011-0.019 (0.28-0.47%)					— (0.0-2.6%)	— (0.0-3.1%)	

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB) [e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Pirimiphos methyl	Average consumers	0.0010-0.0052 (0%)	0.0018-0.0077 (0%)	0.0034 (<1%)	0.0048-0.0081 (<1%)	0.11-0.16 (0.6-0.8%)	0.26-0.31 (1.3-1.5%)	(1.8-5.2%)	(2.9-7.4%)	NA
	High consumers	0.0024-0.0075 (0%)	0.0040-0.012 (0%)	0.0062 (<1%)	0.0086-0.015 (<1%)	NA	NA	(3.4-8.6%)	(5.9-13.9%)	
Profenofos	Average consumers	0.0011-0.0055 (0%)	0.0020-0.0084 (0%)	—	—	—	—	— (0.0-0.5%)	— (0.0-0.5%)	0.00626 (0.02%)
	High consumers	0.0027-0.0084 (0%)	0.0061-0.014 (0%)					— (0.0-1.1%)	— (0.0-1.0%)	NA
Triazophos	Average consumers	0-0.0045 (0-0.45%)	0-0.0065 (0-0.65%)	NA	NA	—	—	— (0.0-17.6%)	— (0.0-15.5%)	0.001671 (0.17%)
	High consumers	0-0.0063 (0-0.63%)	0-0.0099 (0-0.99%)					— (0.0-33.6%)	— (0.0-33.9%)	NA
Trichlorfon	Average consumers	0-0.012 (0-0.59%)	0-0.017 (0-0.86%)	0.011 (<1%)	0.011-0.022 (<1-1%)	—	—	— (0.0-1.6%)	— (0.0-1.8%)	NA
	High consumers	0-0.017 (0-0.84%)	0-0.026 (0-1.3%)	0.028 (1%)	0.026-0.048 (1-2%)			— (0.0-3.9%)	— (0.0-4.6%)	

a Data (only pesticide residues with detectable levels and similar data identified from other places) are extracted from the current Study. (No relevant data from other places were identified for fosthiazate and isocarbophos.) Figures for dietary exposure estimates and contributions to HBGVs are rounded to two significant figures. Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates and < 0.05% of contribution to HBGVs. The 90th percentile of dietary exposure estimates for high consumers.

b Australia (25th ATDS 2019): Dietary exposure estimates of population group aged 6-18 are presented in a range for children aged 6-12 years and teenagers aged 13-18 years. The 90th percentile of dietary exposure estimates for high consumers.

c New Zealand (2016 NZTDS): Dietary exposure estimates of population group aged 19+ are presented in a range among adult females (25 years and over), adult males (25 years and over) and young adult males (19-24 years), those of population group aged 11-14 are presented in range for teenage boys (11-14 years) and teenage girls (11-14 years).

d France (2nd French TDS (2011)): Only % of HBGV. The 95th percentile of dietary exposure estimates for high consumers. HBGVs adopted may not be the same as our current Study.

e Chinese Mainland (6th CTDS)(MB): Dietary exposure estimates for the average Chinese adult males (aged 18-45) are presented.

f Exposure at 0.007106 μg/kg bw/day to omethoate was reported separately under 6th CTDS.

LB, MB and UB denote lower bound and middle bound and upper bound respectively.

"—" denotes not detected in all samples.

"NA" denotes that data are not available.

Table G.3: Carbamates

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB) [e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Carbaryl	Average consumers	0-0.0045 (0-0.056%)	0-0.0066 (0-0.083%)	–	–	0.0016-0.0028 (0.02-0.03%)	0.0028-0.0033 (0.04-0.04%)	(0.0-1.8%)	(0.0-2.0%)	NA
	High consumers	0-0.0064 (0-0.080%)	0-0.010 (0-0.12%)			NA	NA	(0.0-3.0%)	(0.0-4.0%)	
Carbosulfan	Average consumers	0.0038-0.096 (0-0.96%)	0.0064-0.14 (0.064-1.4%)	Carbofuran: 0.0012 (<1%)	Carbofuran: 0.0015-0.0021 (<1%)	Carbofuran: –	Carbofuran: –	– (0.0-1.3%) (Carbofuran: 0.4-89.2%)	– (0.0-2.0%) (Carbofuran: 0.4-103.4%)	Carbofuran: 0.003117 (0.31%)
	High consumers	0.0039-0.14 (0-1.4%)	0.018-0.22 (0.18-2.2%)	Carbofuran: 0.0027 (<1%)	Carbofuran: 0.0036-0.0051 (<1%)			– (0.0-2.3%) (Carbofuran: 1.1-152.1%)	– (0.0-4.2%) (Carbofuran: 0.0-200.9%)	NA
Isoprocarb	Average consumers	0.00075-0.012 (0-0.62%)	0.0010-0.018 (0.051-0.90%)	NA	NA	–	–	NA	NA	NA
	High consumers	0.0016-0.018 (0.079-0.91%)	0.0020-0.028 (0.098-1.4%)							
Methomyl	Average consumers	0.00096-0.0094 (0%)	0.0017-0.014 (0-0.070%)	0.0056 (<1%)	0.0068-0.017 (<1%)	0.0014-0.0019 (0.01-0.02%)	0.0011-0.0013 (0.01-0.01%)	– (0.0-2.2%)	– (0.0-3.4%)	NA
	High consumers	0.0019-0.013 (0-0.067%)	0.0031-0.021 (0-0.11%)	0.011 (<1%)	0.012-0.060 (<1%)	NA	NA	– (0.0-3.9%)	– (0.0-7.0%)	
Oxamyl	Average consumers	0.0010-0.013 (0-0.14%)	0.0012-0.018 (0-0.20%)	NA	NA	–	–	– (0.0-3.9%)	– (0.0-4.9%)	NA
	High consumers	0.0037-0.018 (0-0.20%)	0.0039-0.028 (0-0.31%)					– (0.0-8.4%)	– (0.0-11.0%)	
Pirimicarb	Average consumers	0-0.028 (0-0.14%)	0-0.039 (0-0.19%)	0.0060 (<1%)	0.0049-0.013 (<1%)	0.0010-0.0017 (0.003-0.005%)	0.0005-0.0010 (0.002-0.003%)	NA	NA	–
	High consumers	0-0.040 (0-0.20%)	0-0.059 (0-0.29%)	0.016 (<1%)	0.013-0.042 (<1-2%)	NA	NA			

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB) [e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Propamocarb	Average consumers	0.10-0.10 (0%)	0.11-0.12 (0%)	NA	NA	0.0006-0.0010 (0.0001-0.0002%)	0.0004-0.0013 (0.0001-0.0003%)	— (0.0-0.0%)	— (0.0-0.0%)	NA
	High consumers	0.20-0.20 (0-0.050%)	0.23-0.24 (0.058-0.059%)			NA	NA	— (0.0-0.0%)	— (0.0-0.0%)	

a Data (only pesticide residues with detectable levels and similar data identified from other places) are extracted from the current Study. (No relevant data from other places were identified for fenobucarb (BPMC).) Figures for dietary exposure estimates and contributions to HBGVs are rounded to two significant figures. Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates and < 0.05% of contribution to HBGVs. The 90th percentile of dietary exposure estimates for high consumers.

b Australia (25th ATDS 2019): Dietary exposure estimates of population group aged 6-18 are presented in a range for children aged 6-12 years and teenagers aged 13-18 years. The 90th percentile of dietary exposure estimates for high consumers. Data for carbofuran is extracted for carbosulfan.

c New Zealand (2016 NZTDS): Dietary exposure estimates of population group aged 19+ are presented in a range among adult females (25 years and over), adult males (25 years and over) and young adult males (19-24 years), those of population group aged 11-14 are presented in range for teenage boys (11-14 years) and teenage girls (11-14 years). Data for carbofuran is extracted for carbosulfan.

d France (2nd French TDS (2011)): Only % of HBGV. The 95th percentile of dietary exposure estimates for high consumers. HBGVs adopted may not be the same as our current Study. ND for carbosulfan but detected with carbofuran, and thus both carbosulfan and carbofuran are extracted.

e Chinese Mainland (6th CTDS)(MB): Dietary exposure estimates for the average Chinese adult males (aged 18-45) are presented.

LB, MB and UB denote lower bound and middle bound and upper bound respectively.

"—" denotes not detected in all samples.

"NA" denotes that data are not available.

Table G.4: Dithiocarbamate (DTC) metabolites

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)							
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]	
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17
N,N'-Dimethylthiourea (DMTU)	Average consumers	0-0.012 (0-1.2%)	0-0.017 (0-1.7%)						
	High consumers	0-0.017 (0-1.7%)	0-0.026 (0-2.6%)						
Ethylene thiourea (ETU)	Average consumers	0.013-0.035 (0.32-0.89%)	0.014-0.047 (0.35-1.2%)						
	High consumers	0.034-0.061 (0.86-1.5%)	0.037-0.076 (0.93-1.9%)						
Propylene thiourea (PTU)	Average consumers	0-0.021 (0.12-7.1%)	0.00055-0.031 (0.18-10%)						
	High consumers	0.0012-0.031 (0.39-10%)	0.0016-0.047 (0.52-16%)						
Dithiocarbamate (DTC)[e]	Average consumers			0.39 (10%)	0.39-0.8 (10-20%)	0.028-0.047 (0.9-1.6%)	0.041-0.046 (1.4-1.5%)	(0.0-23.2%)	(0.0-32.6%)
	High consumers			0.91 (25%)	0.86-1.7 (20-45%)	NA	NA	(0.0-42.1%)	(0.0-67.6%)

a Data are extracted from the current Study. Figures for dietary exposure estimates and contributions to HBGVs are rounded to two significant figures. Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates and < 0.05% of contribution to HBGVs. The 90th percentile of dietary exposure estimates for high consumers.

b Australia (25th ATDS 2019): Dietary exposure estimates of population group aged 6-18 are presented in a range for children aged 6-12 years and teenagers aged 13-18 years. The 90th percentile of dietary exposure estimates for high consumers [HBGV for DTC (refer to thiram): 0.004 mg/kg bw/day]

c New Zealand (2016 NZTDS): Dietary exposure estimates of population group aged 19+ are presented in a range among adult females (25 years and over), adult males (25 years and over) and young adult males (19-24 years), those of population group aged 11-14 are presented in range for teenage boys (11-14 years) and teenage girls (11-14 years). [HBGVs for DTC (refer to ferbam, thiram and ziram): 0.003 mg/kg bw/day]

d France (2nd French TDS (2011)): Only % of HBGV. The 95th percentile of dietary exposure estimates for high consumers. [HBGVs for DTC: 0.007 mg/kg bw/day]

e Dietary exposure to DTC metabolites was rarely be reported in other places, in contrast, the dietary exposure to DTC residues was estimated with reference to the detected level of carbon disulphide (CS_2), hence, the data for DTC residues (expressed as CS_2) reported in other places are presented.

LB and UB denote lower bound and upper bound respectively.

"NA" denotes that data are not available.

Table G.5: Other pesticides

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB)[e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Bixafen	Average consumers	0-0.0090 (0%)	0-0.013 (0-0.066%)	NA	NA	–	–	NA	NA	NA
	High consumers	0-0.013 (0-0.064%)	0-0.020 (0-0.10%)							
Cyantraniliprole	Average consumers	0-0.0047 (0%)	0-0.0067 (0%)	NA	NA	–	–	NA	NA	NA
	High consumers	0.00094-0.0067 (0%)	0.00097-0.010 (0%)							
Ethephon	Average consumers	0.032-0.14 (0.063-0.29%)	0.051-0.22 (0.10-0.43%)	–	–	NA	NA	NA	NA	NA
	High consumers	0.099-0.23 (0.20-0.46%)	0.16-0.37 (0.31-0.75%)							
Fenazaquin	Average consumers	0-0.0044 (0%)	0-0.0065 (0%)	NA	NA	NA	NA	– (0.0-0.2%)	– (0.0-0.2%)	NA
	High consumers	0-0.0063 (0%)	0-0.0098 (0%)					– (0.0-0.6%)	– (0.0-0.7%)	
Fipronil	Average consumers	0.0024-0.039 (1.2-20%)	0.0028-0.057 (1.4-28%)	–	–	–	–	– (0.0-20.5%)	– (0.0-29.3%)	0.01561 (7.80%)
	High consumers	0.0066-0.055 (3.3-28%)	0.0059-0.086 (3.0-43%)					– (0.0-42.2%)	– (0.0-62.4%)	NA
Fluxapyroxad	Average consumers	0.011-0.015 (0.053-0.074%)	0.012-0.018 (0.058-0.088%)	NA	NA	–	–	NA	NA	NA
	High consumers	0.022-0.027 (0.11-0.14%)	0.028-0.035 (0.14-0.18%)							
Glufosinate ammonium	Average consumers	0.0090-0.30 (0.090-3.0%)	0.012-0.43 (0.12-4.3%)	–	–	NA	NA	NA	NA	NA
	High consumers	0.026-0.42 (0.26-4.2%)	0.034-0.66 (0.34-6.6%)							
Glyphosate	Average consumers	0.067-0.72 (0-0.072%)	0.097-1.1 (0-0.11%)	0.022 (<1%)	0.025-0.045 (<1%)	NA	NA	NA	NA	NA
	High consumers	0.15-1.0 (0-0.10%)	0.22-1.6 (0-0.16%)	0.048 (<1%)	0.054-0.10 (<1%)					
Lufenuron	Average consumers	0.017-0.020 (0.084-0.10%)	0.021-0.027 (0.11-0.13%)	NA	NA	0.0001-0.0001 (0.0003-0.0004%)	0.0001-0.0001 (0.0005-0.0005%)	NA	NA	NA
	High consumers	0.040-0.044 (0.20-0.22%)	0.052-0.059 (0.26-0.30%)			NA	NA			

		Dietary exposure estimates (μg/kg bw/day) (% Contribution to HBGVs)								
		Hong Kong (LB-UB) [a]		Australia (LB) [b]		New Zealand (LB) [c]		France (LB-UB) [d]		Chinese Mainland (MB)[e]
		Aged 18+	Aged 6-17	Aged 19+	Aged 6-18	Aged 19+	Aged 11-14	Aged 18+	Aged 3-17	Aged 18-45
Pyraclostrobin	Average consumers	0.23-0.24 (0.77-0.79%)	0.20-0.21 (0.68-0.69%)	NA	NA	0.0005-0.0007 (0.002-0.002%)	0.0006-0.0008 (0.002-0.003%)	– (0.0-0.1%)	– (0.0-0.1%)	0.037417 (0.13%)
	High consumers	0.56-0.56 (1.9-1.9%)	0.53-0.54 (1.8-1.8%)			NA	NA	– (0.0-0.1%)	– (0.0-0.3%)	NA
Pyriproxyfen	Average consumers	0.00052-0.0049 (0%)	0.00089-0.0072 (0%)	–	–	–	–	(0.0-0.2%)	(0.0-0.2%)	0.006254 (0.01%)
	High consumers	0.00097-0.0071 (0%)	0.0019-0.011 (0%)					(0.0-0.4%)	(0.0-0.4%)	NA

a Data (only pesticide residues with detectable levels and similar data identified from other places) are extracted from the current Study. (No relevant data from other places were identified for ametoctradin, cyazofamid, cyflumetofen, fenpyrazamine, fosetyl aluminium, isofetamid, isopyrazam, maleic hydrazide, and oxathiapiprolin.) Figures for dietary exposure estimates and contributions to HBGVs are rounded to two significant figures. Values of "0" denote < 0.0005 μg/kg bw/day of dietary exposure estimates and < 0.05% of contribution to HBGVs. The 90th percentile of dietary exposure estimates for high consumers.

b Australia (25th ATDS 2019): Data for population group aged 6-18 are presented in a range for children aged 6-12 years and teenagers aged 13-18 years. The 90th percentile of dietary exposure estimates for high consumers

c New Zealand (2016 NZTDS): Data for population group aged 19+ are presented in a range among adult females (25 years and over), adult males (25 years and over) and young adult males (19-24 years), those of population group aged 11-14 are presented in range for teenage boys (11-14 years) and teenage girls (11-14 years).

d France (2nd French TDS (2011)): Only % of HBGV. The 95th percentile of dietary exposure estimates for high consumers. HBGVs adopted may not be the same as our current Study.

e Chinese Mainland (6th CTDS)(MB): Dietary exposure estimates for the average Chinese adult males (aged 18-45) are presented.

LB, MB and UB denote lower bound and middle bound and upper bound respectively.

"–" denotes not detected in all samples.

"NA" denotes that data are not available.