

Draft Trade Guidelines on Safe Production of Buns and Sandwiches

This set of guidelines is intended for food businesses that prepare and sell buns and sandwiches at premises. It aims to help food trade implement food safety measures in their operations in order to produce and sell wholesome and safe products.

Introduction

Buns and sandwiches are popular in Hong Kong. Various types of products, ranging from with to without fillings, are commonly available in the market.

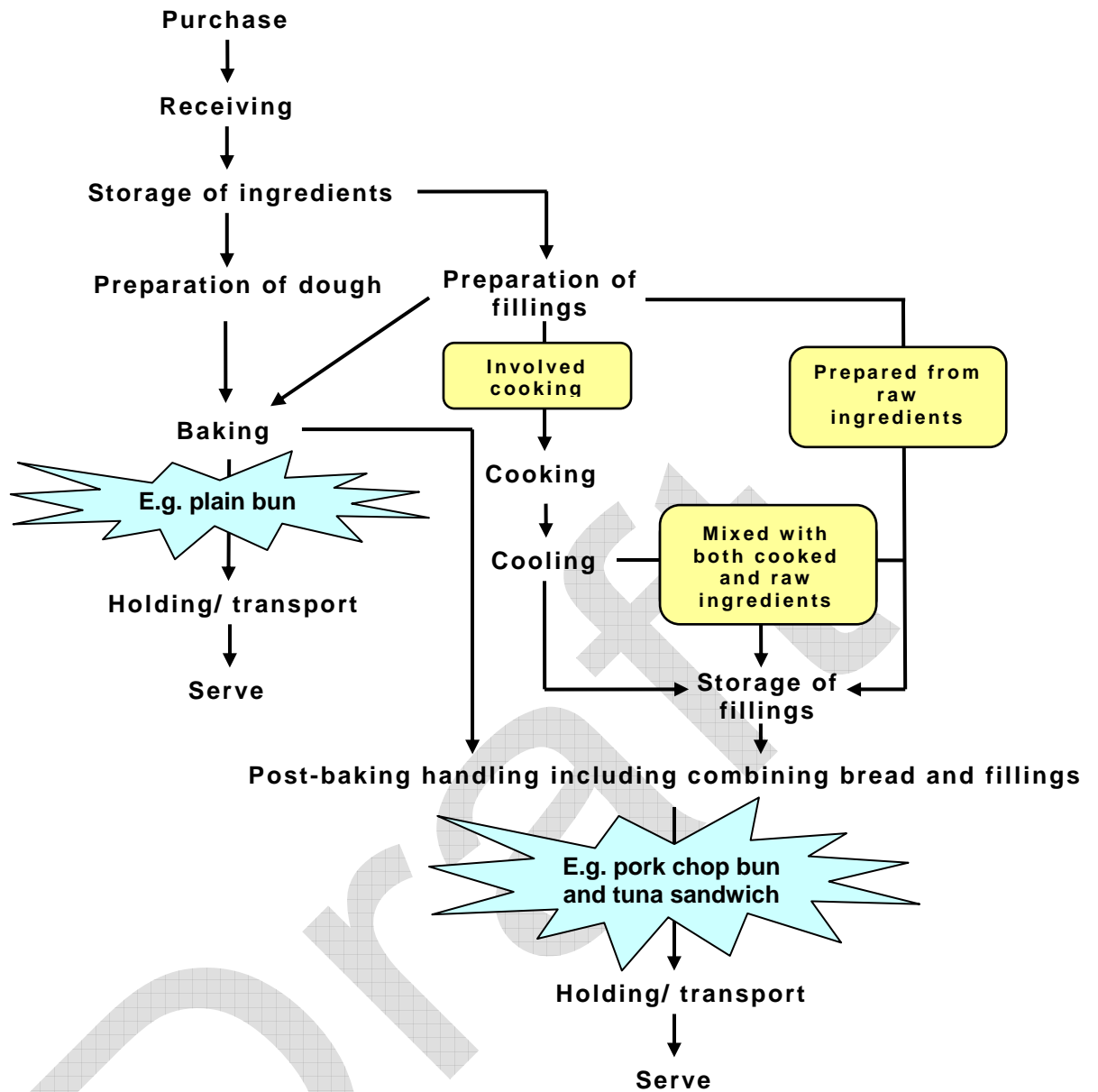
In general, the baking process can not only destroy microorganisms that may be present but also reduce moisture from the bread – especially at the exterior surface. The dehydrated surface of the bread inhibits the growth of most bacteria. It is therefore buns with no further handling after baking and without perishable fillings generally have lower microbiological risks.

Nevertheless, ranges of buns as well as sandwiches available in the market are subject to post-baking handling such as combination of fillings and bread and majority of them are not reheated thoroughly before serve. The microbiological quality of these products may thus of higher concern.

Unhygienic handling of buns and sandwiches may result in contamination by dangerous microorganisms e.g. *Staphylococcus aureus* which may be present on human skin. In addition, the microbiological quality of the fillings added after baking may also affect the safety and hygienic quality of the final product. For instance, some fillings contain raw ingredients e.g. fresh vegetables, in which a variety of microorganisms such as mould, yeast and bacteria may naturally be found. Besides, other ingredients such as meat which are not cooked thoroughly may contain harmful bacteria like *Salmonella* spp. Even most microorganisms are destroyed when the fillings are thoroughly cooked, some bacterial spores e.g. *Bacillus cereus* spores may survive cooking. It is therefore prolonged storage of buns and sandwiches of higher microbiological risks under room temperature may allow microorganisms to grow and spores to germinate, multiply and may even produce heat-stable toxin.

In order to ensure food safety, it is important to implement food safety measures in the production of buns and sandwiches.

A generic flow diagram of the production of different buns and sandwiches



Food Safety Measures for Preparing Buns and Sandwiches

In order to prepare safe and wholesome food, including buns and sandwiches for consumers, it is essential to follow the **5 Keys to Food Safety** in the daily operation:

1. **Choose (Choose safe raw materials)**
2. **Clean (Keep hands and utensils clean)**
3. **Separate (Separate raw and cooked food)**
4. **Cook (Cook thoroughly)**
5. **Safe Temperature (Keep food at safe temperature)**

Below are some practical tips on how you can practise the 5 Keys to Food Safety in the production of buns and sandwiches.

Purchase and receiving

- Obtain food and food ingredients from approved and reliable sources.
- Choose food ingredients before its expiry date.
- Use fresh and wholesome food ingredients and check the quality of the ingredients upon receipt.

Storage

- Store food and food ingredients including sauces and fillings at safe temperatures e.g. perishable items including prepackaged salad dressings after opening at 4°C or below.
- Ideally, use two separate refrigerators for storing raw food and cooked food or ready-to-eat food including ready-to-eat fillings.
- If raw food and cooked food or ready-to-eat food have to be stored in the same refrigerator, do the following :
 - Store food in containers with lids to avoid contact between raw food and cooked food or ready-to-eat food.
 - Store raw meat, poultry, and seafood below cooked food or ready-to-eat food in the refrigerator to prevent juices from dripping onto cooked food or ready-to-eat food.
- Apply the first-in-first-out principle to store food. Do not use food beyond its expiry date or expected shelf life.
- Keep only appropriate amount of sandwich fillings on preparation counter.

Preparation

- Estimate the demand of each type of buns and sandwiches as well as their fillings carefully to avoid over-production.
- Plan the production schedule ahead to avoid preparing buns and sandwiches as well as their fillings too far in advance.
- For producing canned fish containing buns and sandwiches, use appropriate size of canned fish and store them at 4°C or below after opening to avoid prolonged storage at room temperature. Improper handling and storage of canned fish after opening may result in high level of histamine, which may cause foodborne intoxication, known as histamine poisoning (or scombroid fish poisoning).
- Do the followings when washing vegetables:
 - wash them thoroughly and, as far as practicable, in a sink exclusively for this use.
 - replace water at a sufficient frequency to prevent spreading of microbial contaminants.
 - if disinfectants are used, choose the appropriate ones and follow manufacturers' instructions (e.g. methods, quantities specified).
- Food contact surfaces of equipment and utensils should be maintained in a clean and sanitary condition.
- Use separate utensils to handle raw food and cooked food or ready-to-eat food e.g., use different colours codes for different utensils (including cutting boards and knives):
 - Red- Raw food
 - Blue- Cooked food
 - Green- Ready-to-eat food

Cooking (where applicable)

- Cook ingredients e.g. chicken, beef and pork which require cooking thoroughly, with core temperature at 75°C or above for at least 30 seconds.

Cooling (where applicable)

- Cool food from 60°C to 20°C as quickly as possible (within 2 hours); and from 20°C to 4°C, within 4 hours or less.

Holding/ Transport

- Except certain buns which are safe to store at room temperature within their shelf-life e.g. plain rolls and buns with no further handling after baking and without perishable fillings, as a general rule, after proper cooling, if buns and sandwiches have been kept under room temperature (including time for transportation):
 - for less than 2 hours, they can be refrigerated for final use later or used before the 4 hours limit is up.
 - for more than 2 hours but less than 4 hours, they should be used within the 4 hours limit is up but should not be returned to the refrigerator.
 - for more than 4 hours, they should be discarded.
- Transport, store and display sandwiches and buns subject to further handling after baking and with perishable fillings at 4°C or below. Where possible, transportation, storage and display units of these products should be equipped with accurate temperature control and monitoring devices.
- Adopt appropriate measures to ensure first-in-first-serve of buns and sandwiches e.g. use date and time coding to show the storage time. Do not provide buns and sandwiches to consumers after their expiry date.

Personal hygiene

- Always follow good personal hygiene practices, including:
 - Wash hands thoroughly with running water and soap for 20 seconds before and after handling foods, often during food preparation and after going to the toilet;
 - Wear clean and light-coloured outer clothing or protective overalls;
 - Refrain from smoking and eating during preparation. Open wound should be covered by bright-coloured waterproof bandages or gloves;
 - Suspend from engaging in any food handling work when suffering or suspected to be suffering from an infectious disease or symptoms of illness such as flu, diarrhoea, vomiting, fever, sore throat and abdominal pain.

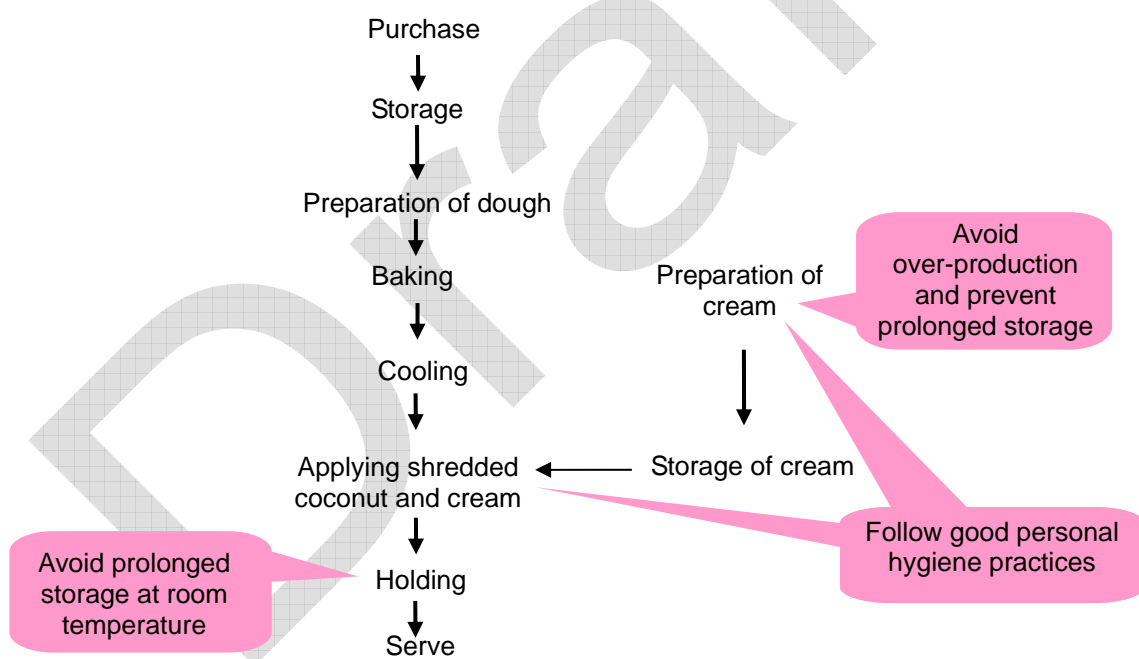
Tips for Safe Production of Buns with Higher Microbiological Risks

A recent study has shown that some high risk buns such as coconut and cream bun and hot dog available in the local market may have sub-optimal microbiological quality. Factors such as post-baking contamination, improper storage and unhygienic handling may affect the microbiological quality of food. To ensure food safety, special attention should be paid in producing these products as highlighted below.

A. Tips for the production of coconut and cream buns[†] to ensure food safety

Coconut and cream bun is a bun containing shredded coconut on surface and a cream filling. To prepare coconut and cream bun, the bun is first baked. Post-baking manual handling including slicing and applying shredded coconut and cream may be involved after the bun is cooled. Below are the measures which need special attention during production:

- ✓ Estimate the demand including the cream filling carefully to avoid over-production.
- ✓ Use separate utensils to handle raw food and cooked food i.e. buns.
- ✓ Due to the high sugar content which will not support the growth of dangerous microorganisms, some artificial creams may be safe at room temperature. In case of doubt, advice should be sought from the supplier or discard artificial cream stored at room temperature after 4 hours.
- ✓ Avoid prolonged storage at room temperature; discard coconut and cream buns which are kept under room temperature after 4 hours.
- ✓ Always follow good personal hygiene practices.

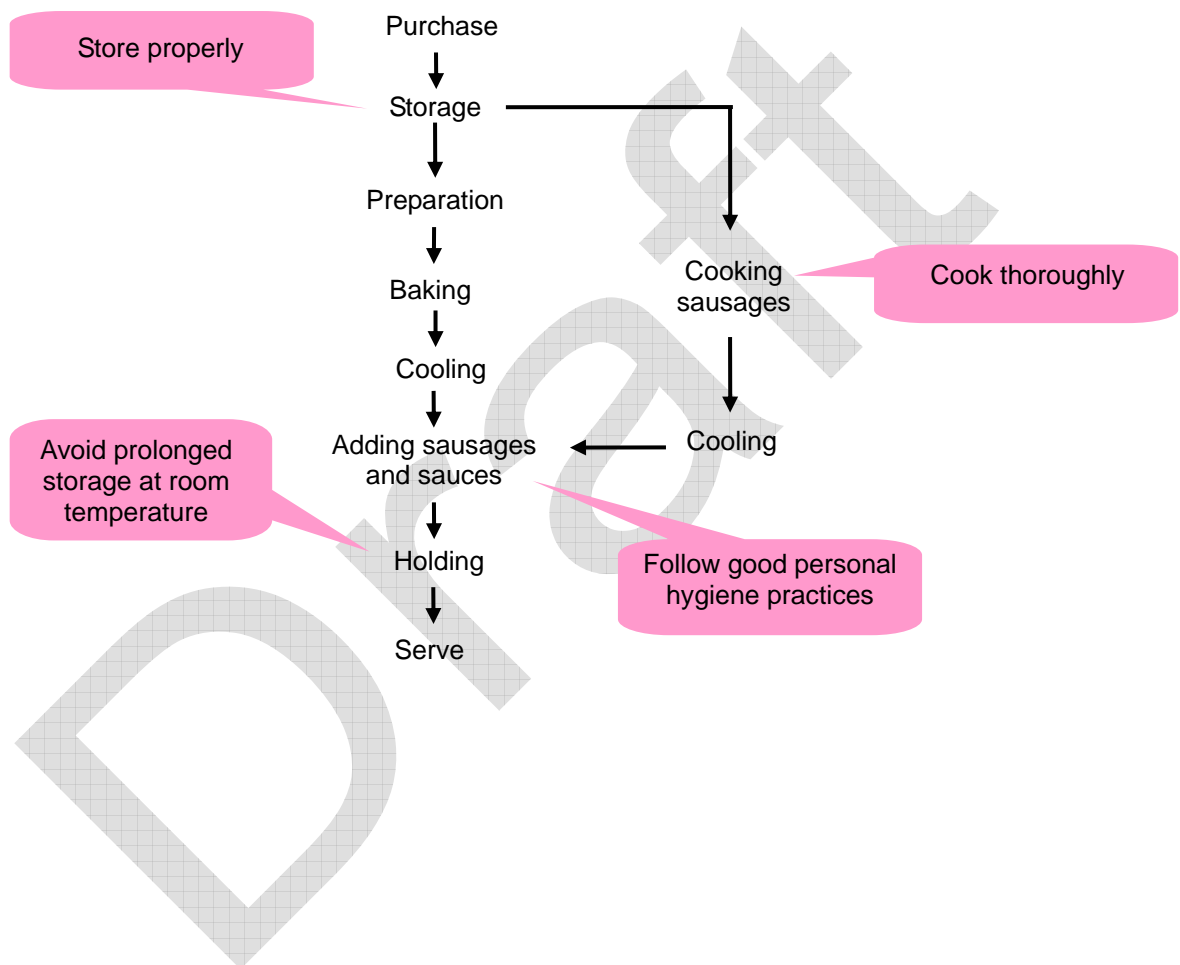


[†] Variations are expected to suit particular operations

B. Tips for the production of hot dogs[†] to ensure food safety

Hot dog is a sliced bun usually served with a sausage and ranges of other ingredients such as ketchup, mustard and pickles. Some food premises bake buns for making hot dogs while some simply obtain buns from the supplier. Buns are then subject to various post-baking manual handling including slicing and adding sausage as well as other ingredients. Below are the measures which need special attention during production:

- ✓ Store ingredients properly; refrigerate perishable items at 4°C or below.
- ✓ Estimate the demand carefully to avoid over-production.
- ✓ Except ready-to-eat sausages, cook sausages thoroughly, with core temperature at 75°C or above for 30 seconds.
- ✓ Refrigerate hot dogs which are kept under room temperature within 2 hours or discard them after 4 hours.
- ✓ Always follow good personal hygiene practices.



[†] Variations are expected to suit particular operations