

Oxalates in Food

Trade Consultation Forum

4 March 2011



Suspected oxalate food poisoning cases

- Recently five cases of vegetable food poisoning cases suspected to be connected with oxalate poisoning;
- Involved different vegetables: watercress, Chinese kale, lettuce, spinach, Chinese boxthorn;
- Investigation is ongoing;
- Currently, no definite cause identified.





Photo credit: School of Chinese Medicine, Baptist University of HK

- Giant Alocasia (海芋 *Alocasia macrorrhiza*)

What are oxalates?

- Water soluble as oxalic acid;
- Some of its salts (oxalates) are soluble while some are insoluble;
- Naturally present in many plants in different forms.
 - Insoluble calcium oxalate in form of needles, clusters, crystal sands or as larger crystals in plants



High oxalate levels in some common food plants/wild plants

	<u>oxalate mg/100 g</u>
• Lemon peel	83
• Raspberries, black	53
• Rhubarb, stewed, no sugar	860
• Amaranth (raw, edible portion)	1009
• Beetroot, boiled	675
• Purslane (馬齒莧) (raw, edible portion)	1310
• Spinach (raw, edible portion)	970
• Water dropwort (水芹) (raw, edible portion)	1480 – 1700
• Watercress (raw)	310
• Wheat germ	269
• Giant Alocasia root	30 - 128



Possible causes?

- Despite relatively high levels of oxalates in these edible plants, they are not known to cause food poisoning;
- Oxalate level in *root* of Giant Alocasia : 30-128 mg/100g
- Calcium oxalate “needles” exists in some wild/ornamental plants;
- Mixed up?
- Direct irritation / intoxication through consumption of implicated plants?



Advice to trade

- Source vegetables from reliable suppliers ;
- Wash vegetables thoroughly;
- Remove any plants mixed in the vegetables.



Thank you!

