

# Five keys to safer food



## Keep clean

- ✓ Wash your hands before handling food and often during food preparation
- ✓ Wash your hands after going to the toilet
- ✓ Wash and sanitize all surfaces and equipment used for food preparation
- ✓ Protect kitchen areas and food from insects, pests and other animals

### Why?

While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.



## Separate raw and cooked

- ✓ Separate raw meat, poultry and seafood from other foods
- ✓ Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- ✓ Store food in containers to avoid contact between raw and prepared foods

### Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

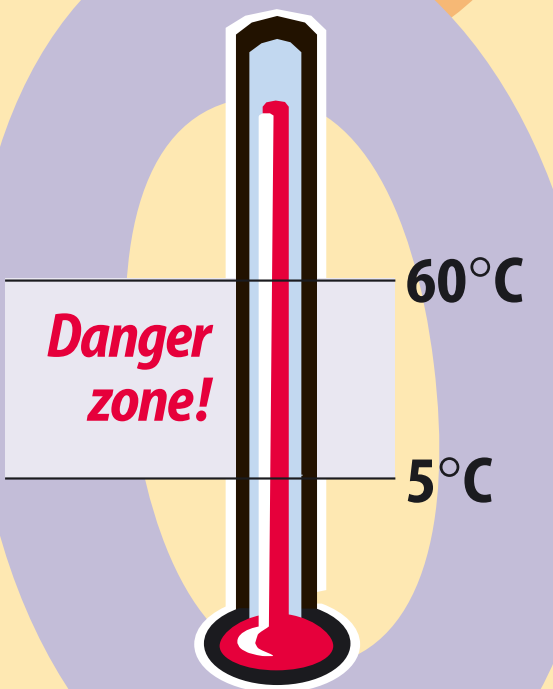


## Cook thoroughly

- ✓ Cook food thoroughly, especially meat, poultry, eggs and seafood
- ✓ Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- ✓ Reheat cooked food thoroughly

### Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.



## Keep food at safe temperatures

- ✓ Do not leave cooked food at room temperature for more than 2 hours
- ✓ Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- ✓ Keep cooked food piping hot (more than 60°C) prior to serving
- ✓ Do not store food too long even in the refrigerator
- ✓ Do not thaw frozen food at room temperature

### Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.



## Use safe water and raw materials

- ✓ Use safe water or treat it to make it safe
- ✓ Select fresh and wholesome foods
- ✓ Choose foods processed for safety, such as pasteurized milk
- ✓ Wash fruits and vegetables, especially if eaten raw
- ✓ Do not use food beyond its expiry date

### Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.

# Five keys to growing safer fruits and vegetables

Promoting health by decreasing microbial contamination

## Practice good personal hygiene

- ◆ Wash and dry hands with a clean, dry towel after toileting, diapering a child and contact with animals
- ◆ Change clothes and bathe regularly
- ◆ Cover cuts, lesions and wounds
- ◆ Use a toilet or latrine to urinate and defaecate

**Why?** Dangerous microorganisms are found in human and animal faecal waste, and infected wounds, and can be transferred to fruits and vegetables by hands, clothing and other surfaces. Good personal hygiene practices help prevent the transfer of dangerous microorganisms to fruits and vegetables and decrease the risk of foodborne diseases.

## Protect fields from animal faecal contamination

- ◆ Keep animals from roaming in growing fields
- ◆ House livestock downhill from growing fields in a fenced area
- ◆ Remove trash from in and around growing fields

**Why?** Dangerous microorganisms in animal faeces can contaminate crops directly when animal defecate in fields - or indirectly when rainwater becomes contaminated with dangerous microorganisms and runs downhill into the growing fields. Trash, food and water in and around growing fields attract animals including wild birds.

## Use treated faecal waste

- ◆ Use faecal waste (manure and human excreta) that is properly treated
- ◆ Apply treated faecal waste to fields prior to planting
- ◆ Maximize the time between the application of treated faecal waste and harvest

**Why?** Properly treated faecal waste (manure and human excreta) is an effective and safe fertilizer. Dangerous microorganisms in human and animal faecal waste can survive for long period of time and contaminate fruits and vegetables. Faecal waste must be treated to kill the microorganisms.

## Evaluate and manage risks from irrigation water

- ◆ Identify all water sources relevant to your growing field
- ◆ Be aware of the risk of microbial contamination of water
- ◆ Protect water from faecal contamination
- ◆ Apply control measures when using water contaminated or of unknown quality

**Why?** Water is needed for humans, animals and agriculture. The risk of microbial contamination of different water sources varies. Dangerous microorganisms in faecal waste can contaminate water and then be transferred to soil and crops via irrigation. Water used for irrigation of fruits and vegetables must not introduce dangerous microorganisms.

## Keep harvest and storage equipment clean and dry

- ◆ Wash harvest and storage equipment with clean water and dry before use
- ◆ Keep containers off the ground before, during and after harvesting
- ◆ Remove visible dirt and debris from fruits and vegetables in the field
- ◆ Cool fruits and vegetables quickly
- ◆ Limit access of animals, children and other non-workers to the harvest and storage areas

**Why?** Fruits and vegetables can become contaminated with dangerous microorganisms during harvest by contact with contaminated hands, soil, harvest equipment and storage facilities. Wet or damp surfaces promote the growth of dangerous microorganisms.



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# Five keys to safer aquaculture products to protect public health

## Practice good personal hygiene

- ◆ Use toilet or latrine to urinate and defaecate
- ◆ Wash and dry hands with a clean, dry towel after toileting, diapering a child and contact with animals
- ◆ Cover cuts and sores when working around fish ponds
- ◆ Wash hands and change clothes after working around the ponds and harvesting fish

**Why?** Dangerous microorganisms and chemicals are found in human, animal and plant waste and infected wounds. Chemicals and dangerous microorganisms can be transferred by hands and clothing spreading contamination. Washing hands and changing clothes helps prevent the spread of contamination and decreases illness.

## Clean the pond site

- ◆ Locate ponds away from latrines, livestock, and poultry
- ◆ Choose a pond site where the chance of contamination with heavy metals or other harmful chemicals is low
- ◆ Remove weeds, rubbish chemical containers and old equipment from pond site
- ◆ Keep livestock and poultry in an area that prevents access to the fish pond

**Why?** Dangerous microorganisms in faecal waste from people and animals can also contaminate soil, aquatic animals and fish. Heavy metal and other harmful chemicals found in soil can cause illness in fish or in people who eat the fish.

## Manage water quality

- ◆ Select a water source that has a very low chance of contamination with heavy metals, other chemicals and harmful microorganisms
- ◆ Prevent people and animals, including ducks, geese and pets, from flying over, wading or swimming in ponds
- ◆ Keep rubbish, food and faecal waste removed from the home away of the pond
- ◆ Do not pen animals over the pond

**Why?** Chemicals and harmful microorganisms from manufacturing activities and in faecal waste from humans, animals, including wild birds can contaminate water. These chemicals and dangerous microorganisms can then be transferred to the fish causing illness in the fish or contamination of the fish meat.

## Keep fish healthy

- ◆ Stock ponds to the proper density with healthy fish seed stock from a certified hatchery or reliable supplier
- ◆ Maintain stock at the proper density in the growing pond
- ◆ Remove and dispose sick and dead fish daily
- ◆ Avoid using unapproved chemicals to maintain fish health

**Why?** Healthy fish require healthy seed, proper stocking density and good post-stocking management practices including managing stress and disease. Adding chemicals to ponds may harm the fish, hide a disease problem and leave residues in fish meat that can be unsafe for consumers.

## Use clean harvest equipment and containers

- ◆ Wash harvest containers and equipment with clean water
- ◆ Harvest fish early in the day and transport live or cool quickly
- ◆ Use clean water to wash harvested fish
- ◆ Keep harvested fish in clean containers on non porous material

**Why?** During harvest, fish can become contaminated by contact with sick workers or water, ice, hands, harvest equipment and containers that are not clean. Containers made of smooth, non absorbant material are easy to clean and provide fewer places for microorganisms to grow.



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in collaboration with the Food and Agriculture Organization of the United Nations (FAO)