Causes of Food Deterioration and Spoilage

What causes Food to go off?

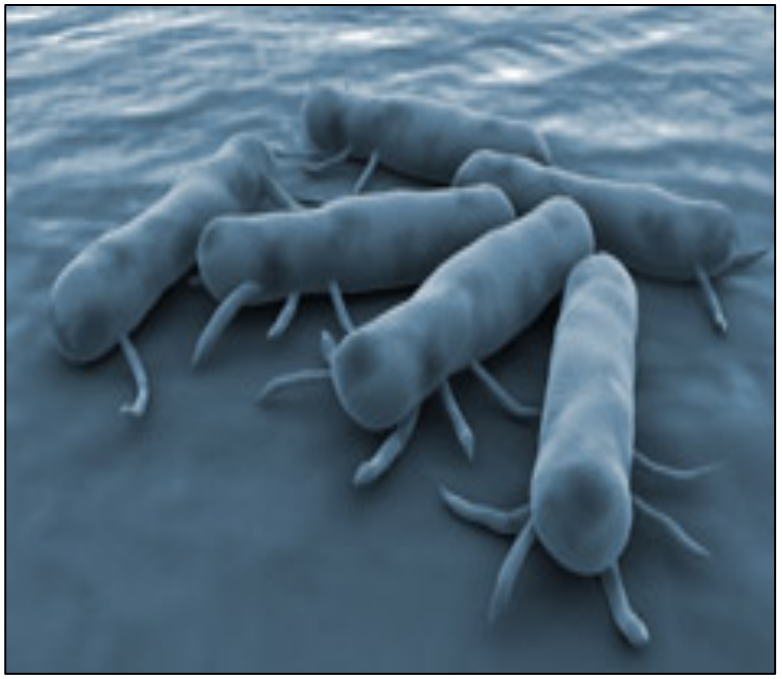
Microbial Activity

Micro-organisms occur naturally in the environment and they can cause foods to become rotten.

There are 3 types of micro –organisms;

1. Bacteria
2. Yeasts
3. Moulds

- **1. Bacteria:** Bacteria are microscopic organisms that cause food poisoning when consumed. Bacteria like moist, warm, low acid environments.



- **2. Yeasts:** Yeasts are single – celled plant organisms that can produce slime on fruit juices and vinegar products and can cause other foods to ferment and thus spoil.

- Ferment – production of acid or alcohol by micro organisms that changes the texture, flavour and aroma of food.

- Therefore, foods affected by yeast can give a tingly sensation to the tongue and a slightly acidic flavour.

- Yeasts are unpleasant, but not harmful.

- **3. Moulds:** Mould is different from the other micro-organisms as it can be seen by the naked eye.

- Moulds are a form of fungi an reproduce by forming spores on the surface of foods.

- Mould appears as dark cottonwool-like mass on the surface of food like bread, cheese and fruit.

- The appearance of mould make food undesirable, but they do not cause as much illness as bacteria.

- Moulds are used in the production of food, such as; blue vein cheese.

Enzymatic Changes

- Enzymes help to speed up reactions.
- Some Enzymes found naturally in foods can cause food spoilage. These natural chemicals cause foods to ripen and age.
- This process does not 'switch itself off' and continues past the optimum ripening stage.
- For example, when you pick a banana and leave it to sit in a fruit bowl for a while, it will begin to brown and soften.

Physical and Chemical Reactions

- Storing food correctly is important as it reduces the opportunity for foods to be exposed to conditions that will affect their physical and chemical properties.

- Non-Perishable foods, such as canned foods, should be stored in a clean pantry that is at room temperature and free from any moisture to prevent mould from developing.

- Dry goods, such as cereals and breads, should be stored in airtight containers to stop contamination by insects and rodents.

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- Cold storage includes refrigerated and frozen storage areas. Refrigerators should be operating at or below 5°C, while Freezers usually keep foods below -18°C.

- All foods in the refrigerator should be well covered and organised to avoid **cross contamination.**

- Frozen Foods should be well covered and the air should be released to avoid 'Freezer Burn'.

Environmental Factors

Food can be contaminated as a result of environmental factors. These include;

- ✓ Food coming in contact with dirt or dust.
- ✓ Insect spray being used in the kitchen while food is left uncovered.
- ✓ Foods being exposed to the air.
- ✓ Damaged packaging.
- ✓ Foods stored in the temperature danger zone.

- ✓ A waiter accidentally putting his/ her fingers on the plate while serving food.
- ✓ Food placed on crockery (plates, bowls) that have been incorrectly cleaned.
- ✓ A food handler using a gloved hand for both serving food and handling money.