



Buy food in reasonable quantities, especially when it comes to perishable food, to help avoid long-term storage. ST FILE PHOTO

**The ST Guide To... food safety**

# Let your senses be your guide on food quality

Consuming food products before the expiration date does not guarantee the safety of the item if it is not stored properly, and a product is not necessarily unsafe after the expiration date if stored properly. Associate Professor Lim Bee Gim, programme director of chemical engineering and food technology at Singapore Institute of Technology, tells Mind&Body editor Ng Wan Ching what to watch out for when it comes to food safety.



Most expiration dates on food products are guidelines, based on normal and expected handling of the food and its exposure to temperature. There are many factors that could affect the storage life and the quality of the food product, said Associate Professor Lim Bee Gim.

The most important factors will be the temperature and humidity at which the product is stored before and after purchase.

After the "use by" or "best before" date has passed, a gradual change may be noticed in the unopened product's texture, colour or flavour.

Prof Lim gives some practical tips on how to extend the shelf life of food and to ensure its safety and quality.

- Buy food from established and reliable stores.
- Choose food that has not passed its expiry date, as shown on the packaging.
- Do not buy chilled or frozen food that is displayed at room temperature.
- Pick up refrigerated and frozen foods just before check-out. Refrigerated foods should be cold and frozen foods should be solid with no evidence of thawing.
- Handle food items gently. Improperly packaged foods, dented cans and broken packages provide places for micro-organisms, air, light and creatures to enter. Gentle handling of food items will help maintain food quality and safety longer.
- Buy in reasonable quantities, especially when it comes to perishable food, to help avoid long-term storage.
- Practise Fifo (first-in-first-out) to ensure food stored in the refrigerator, freezer or pantry is consumed within the expiration dates. When stocking food, place recently purchased items behind the existing food items.
- Air, moisture, heat and light hasten spoilage for most shelf-stable products. So keep these foods in a cool dry cupboard away from sunlight.

- Cereals, nuts and biscuits may be stored at room temperature in tightly closed containers to keep out moisture and insects. They can also be stored in the fridge. This will slow microbial growth. Enzymatic and oxidation processes, for example, retard

rancidity of the natural oils, which are the main culprits of food spoilage and deterioration.

- Before consuming a food item, ensure its smell, flavour or appearance are not "off". When in doubt, throw it out.

In addition, she offers tips applicable to selected categories of food.

#### TINNED FOOD

Store tinned food in cool dry places with no direct sunlight. Do not allow sealed cans to freeze. Freezing changes food textures, and leads to rust, burst tins and broken seals that may let in harmful bacteria.

If tinned goods are stored in ideal conditions, you can significantly increase the product's shelf life. A better way to tell if tinned foods are still safe to eat, than any arbitrary date printed on the packaging, is to use the sight and smell test.

Is the tin dented, rusted or bulging? These are signs that the food item contained in the tin has become compromised. Tins that spurt liquid upon opening are another sign that the food has become compromised.

A bad odour is one of the biggest indicators of spoilt food. It will let you know in most cases if the contents in the tin are safe to be consumed.

#### COOKED FOOD

Cooked food such as a roast chicken needs to be handled in the same way as a cake with frosting made of whipped cream or eggs.

It's advisable not to leave cooked food or other perishable food at room temperature for more than

two hours because bacteria grow rapidly at temperatures between 5 deg C and 60 deg C.

If the food is not to be consumed within two hours, it should be stored in the refrigerator to prevent the growth of micro-organisms.

Cooked food such as a roast chicken can be kept in the fridge for two to four days, or up to six months if it's frozen.

The best way to tell whether the roast chicken is still good is by smelling and checking the appearance of the meat. If it has a sour smell and slimy texture, it shows that the meat has gone bad and should be discarded.

#### FRESH MEAT

Generally, fresh meat should not be stored in the refrigerator longer than three to five days. The cool temperature in the refrigerator (4 deg C) slows down bacterial growth but it will not stop the growth completely.

It is thus important to use food in a timely fashion to help maintain freshness and quality. If you would like to keep the meat longer, wrap the meat tightly in aluminium foil, heavy plastic bags or freezer paper and store in the freezer.

The shelf life of meat can be extended for up to six months in the freezer.

It is better to make more frequent purchases than to freeze meat for extended periods of time, which can affect its quality.

Freezer burn, caused by loss of moisture from the frozen food's surface, can result if meat is stored longer than the recommended storage time or when it is not wrapped properly. Vacuum packaging can also aid in reducing freezer burn.

Always shop for meat just before check-out. Use an insulated shopping bag that helps to keep meat cold.

If you need to travel for over 30 minutes before reaching home, place your chilled and frozen purchases in an insulated cooler.

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- For more tips, please read the full version at <http://str.sg/4puM>