

# CUT MELON SURVEY PROJECT

## The issue

Melons and papaya are a popular food across Australia, particularly as a refreshing snack, dessert or ingredient.

The main types of melons produced (and consumed) in Australia are watermelon, rockmelon and honeydew melon.

Supermarkets and greengrocers often sell melons that have been cut and wrapped in cling film on-site. Major supermarkets often refrigerate cut rockmelon, honeydew and papaya but not necessarily cut watermelon. Most greengrocers do not display these products under temperature control.

Cut melons and papaya are classified as potentially hazardous foods, and there have been several notable outbreaks in Australia linked to melons, which have been contaminated at the growing farm. To better understand the risks, a survey was undertaken to gather data on the prevalence of pathogenic bacteria on cut melons and papayas and the handling of these products at retail level.

## What we did

Between January and August 2015, samples of pre-cut melons and papayas were purchased from 45 greengrocers and supermarkets across Sydney. The top 1-1.5cm layer of the cut products was tested for Standard Plate Count (SPC), *E. coli*, *Salmonella* and *Listeria monocytogenes*.



At the time of sampling a questionnaire was also undertaken to collect information on handling and storage of the melons and papayas at retail level.

The questionnaire included questions relating to:

- the frequency of cutting
- preparation of fruit
- cutting equipment
- use of sanitiser for cleaning cutting equipment
- the display and storage of fruit
- date marking and
- treatment of leftover fruit.

The placement of the produce on display was also recorded.

In addition, pH and water activity was also analysed for a portion of samples to assist with modelling of bacteria growth. Only samples of ½ melons and papaya (including ¼ watermelons) that were already cut, wrapped and on display for sale were included in this survey.

Other cut fruit included in this survey were jackfruit, dragon fruit, winter melon, casaba and piel de sapo. Diced or peeled fruit as well as pineapple was excluded in this survey. Cut fruit from stores that only cut fruit on request were also not included.

## What we found

A total of 191 samples were tested for microbiological quality. Overall the microbiological quality of samples tested was very good.

- *Salmonella* was not detected in any sample.
- *E. coli* was detected in one sample of watermelon at 1,100 cfu/g, and
- *L. monocytogenes* was detected in one sample of honeydew with a level under the limit of detection (10 cfu/g).

Of more interest were the differing levels of Standard Plate Count (SPC). SPC can provide a general indication of the microbiological quality of a food, however, it does not differentiate between the natural microflora of a food and spoilage microorganisms. It should not be used to predict the safety of the product and will be influenced by the storage conditions of the product. As cut melons and papaya are a raw food it is expected that they will have a low to medium SPC.

Only 3 samples (1.6%) did not have a SPC above detection level (10 cfu/g). These were a paw paw and two watermelon samples, purchased during summer and stored at ambient temperature inside the store. The majority of samples (63%) had a SPC between 1,000 & 100,000 cfu/g.

Thirteen samples (7%) had a SPC greater than the maximum level of quantification (30,000,000 cfu/g). These were all purchased in summer and consisted of eight honeydews, one papaya, three rockmelons and one watermelon sourced from 11 stores.



## The outcome

The microbiologically quality of the cut fruit tested in this survey was very good and this reflects the finding that many of the outbreaks have been caused by poor practices outside of the retail environment.

While cut melons and papaya are classified as potentially hazardous, our survey found that they are safe to be displayed at room temperature for a period of time, i.e. the day on which it is cut.

Fruits should also be regularly cut throughout the day using clean and sanitised equipment and sold on the day they are cut.

## Next steps

The NSW Food Authority and local councils work in partnership at the retail level to ensure the safe handling, preparation and sale of food. Working together, they will provide education and guidance to the retail sector to ensure safe food with a focus on the following:

- Education regarding the difference between, and the need for both detergent and sanitiser should be conducted. As well as the importance of cleaning and sanitising often and between cutting different types of fruit to prevent cross contamination.
- The practice of re-trimming melons should be discouraged, especially if the fruit is displayed at room temperature.
- The sector should be encouraged to cut small amounts and often, especially if displaying at room temperature.
- The Food Authority to develop new education material regarding the risks associated with having cut fruit on display.

About the NSW Food Authority: The NSW Food Authority is the government organisation that helps ensure NSW food is safe and correctly labelled. It works with consumers, industry and other government organisations to minimise food poisoning by providing information about and regulating the safe production, storage, transport, promotion and preparation of food.

Note: This information is a general summary and cannot cover all situations. Food businesses are required to comply with all of the provisions of the Food Standards Code and the *Food Act 2003* (NSW).



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