



Australian Government

Australian Quarantine and Inspection Service

AQIS Imported Food Surveys

Report 2 - Imported Horticultural Products Extension Survey

Prepared by the Imported Food Program
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Executive Summary

The Australian Quarantine and Inspection Service (AQIS) extended a survey on imported horticultural products to test imported fresh vegetables for the presence of the pathogenic bacterium *E. coli* O157:H7.

From January to December 2006, a total of 41 samples of horticultural products were sampled and tested for *E. coli* O157:H7.

No *E. coli* O157:H7 was detected in the samples taken for this survey.

Food Standards Australia New Zealand (FSANZ) has advised that the results confirm horticultural products pose a low health risk.

This extended survey report should be read in conjunction with Report 1 – Imported Horticultural Products.

Background

AQIS undertook a survey from August to October 2005, to provide a snapshot of the microbiological and chemical residue status of imported horticultural products (vegetables). The results of the survey showed that imported horticultural products are safe. Comparing this result with data from state government and other surveys¹ of domestic produce indicates that imported produce has microbiological and chemical levels comparable to Australian produce.

Of the 97 samples tested, 14 samples had traces of *E. coli* bacteria. Whilst most strains of *E. coli* are harmless to humans, a small number of strains are considered pathogenic. This report of the first survey can be found on the AQIS website at www.daffa.gov.au/aqis/import/food/surveys.

Based on scientific advice and to be consistent with the National Horticulture Survey being co-ordinated by FSANZ, AQIS extended the survey to test imported fresh vegetables for the presence of the pathogenic bacterium *E. coli* O157:H7. The results of the extended survey are presented in this report.

Method

The scope of the survey included four points of entry into Australia (Sydney, Perth, Melbourne and Brisbane). Samples were collected aseptically by AQIS field staff, using the attached protocol (see Attachment 1). Where samples were identified by AQIS as a potential quarantine risk, they were stored at -18°C for a period of not less than one week prior to sampling.

A total of 41 samples were collected over the 12 month period January to December 2006. Samples were only taken from fresh vegetables for this extended survey as these were the products found to have *E. coli* present in the initial survey. The samples were analysed for *E. coli* O157:H7.

EML Consulting Services Pty Ltd Queensland conducted the analysis of all samples for this survey. The testing was carried out using their NATA accredited Bax System PCR Assay for Screening *E. coli* O157:H7 Kit.

¹ Microbiological quality of fruit and vegetables in Western Australian retail outlets 2005. Department of Health, Government of Western Australian. FSANZ Total Diet Surveys from 2005, 200, and 2001.

Results

No *E. coli* O157:H7 was detected in any of the samples taken for this survey. The products tested and their country of origin are listed in Table 1.

Table 1 – Microbiological Testing Results for the Extended Horticultural Survey

Horticultural product	Number of samples	<i>E. coli</i> O157:H7 results	Country of origin
Asparagus	5	Not Detected	Thailand Peru
Baby corn	5	Not Detected	Thailand
Capsicum	1	Not Detected	New Zealand
Cassava leaf	2	Not Detected	Fiji
Drumstick leaf	1	Not Detected	Fiji
Garlic	5	Not Detected	China Argentina
Garlic shoots	1	Not Detected	China
Mushrooms	8	Not Detected	China Taiwan Thailand
Onion	1	Not Detected	USA
Shallots	2	Not Detected	The Netherlands
Sugar snap peas, Snow peas	7	Not Detected	China
Taro	2	Not Detected	China
Yams	1	Not Detected	Fiji

Discussion

In designing the extension survey, AQIS considered scientific advice and work being co-ordinated by FSANZ on the National Horticulture Survey. It was determined that testing for presence of *E. coli* O157:H7 would target the pathogenic *E. coli* of most concern that could potentially be present on fresh vegetables.

No *E. coli* O157:H7 was detected in any of the samples taken over the 12 month period of the survey. FSANZ advised that the results of the survey support their original conclusion that imported vegetables pose a low health risk.

As discussed in the report on the initial survey into imported horticulture products, health authorities in Australia recommend washing and cooking vegetables as a risk mitigation step for the presence of micro-organisms, including *E. coli*.

Conclusion

These results, supported by other survey work conducted by AQIS and state/territory regulatory agencies continue to show that imported horticultural products are safe.

Acknowledgements

AQIS acknowledges the assistance of FSANZ for the provision of independent expert advice.

AQIS also acknowledges the assistance of the Food Surveillance Network in designing this survey. The Food Surveillance Network includes government representatives from each state and territory in Australia, the Commonwealth, and New Zealand.

Attachment 1 – Sampling Protocol

All sampling will occur when the Imported Food inspection is undertaken.

Please conduct normal inspection activities, including sampling. At the end of the inspection activities, please take an additional sample.

General notes

- Sample quantity: 100g
- Sample portion: only edible portion of vegetables are suitable for sampling and testing.
- Sample preparation: samples are to be tested “as is” – that is, vegetables will not be washed or rinsed or otherwise treated prior to testing.

Drawing an aseptic sample

- 1) Ensure that conditions are suitable for aseptic sampling
- 2) Wash your hands or use wipes
- 3) Sterilise the equipment by using sterilising wipes or spraying with ethanol then ignite with a flame, taking into account OH&S considerations
- 4) Collect sample and place into the appropriate container.
- 5) Seal sample container
- 6) Clean equipment.
- 7) Continue until all sub-samples have been sampled.
- 8) Place all sub-samples into one bag, and attach a completed ‘Sample Identification Form’ to the bag
- 9) Clean equipment
- 10) Deliver sample to Laboratory sample depot for lab pick up
- 11) If necessary, notify laboratory to arrange for collection of sample.