

Food exports: a matter of taste

Discovering what people in other countries like to eat, and why, could help Australia export more food. Providing this information to Australian producers is the role of CSIRO's Sensory Research Centre, part of the Division of Food Science and Technology at North Ryde in New South Wales.

Research at the centre concentrates on the senses that relate to food acceptance. According to the centre's Dr John Prescott, taste and smell are the most important of these, followed by visual, then textural perceptions. The techniques used in the research range from molecular biology to cross-cultural studies.

Japan, with a food market worth \$500 billion a year, is the latest focus of research into international taste perceptions. Success in the Japanese food market depends on product quality. This is largely judged by sensory qualities such as aroma, taste, texture and appearance. A full-time scientist has been based in Japan to carry out sensory evaluation trials (scientifically controlled and evaluated 'taste tests').

'The Japanese eat a lot of western foods, but these still need modification to suit Japanese tastes,' Prescott says. 'We've been studying Japanese tastes for five years now and will possibly expand the research to cover other Asian countries. There's great potential to export to these regions.'

'We're trying to determine a number of things. For example, is the Japanese palate more sensitive than the Australian palate to particular tastes? Are there any fundamental differences between Australians and Japanese in liking particular tastes?'

Among their findings are that the Japanese have similar taste sensitivity to Australians. Taste preferences for sweetness and saltiness in foods, however, differ.

Food irritants are another area of research at the centre.

'About 25% of the world's population eats chilli every day,' Prescott says. 'We're investigating such things as how the heat of chilli interacts with tastes and odours. For example, does the heat of chilli depress flavours during eating?'

The food industry does not have any guiding principles on how to use food ingredients that produce pungency. According to Prescott, chilli, pepper, and mustard are used on a 'trial and error' basis.

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Testing time for tuberculosis

In the 1960s, when people believed that tuberculosis had been beaten, control measures were relaxed and were focussed on the homeless and the aged. Scientists now blame this decreased vigilance for the emergence of new strains of tuberculosis bacteria that are resistant to antibiotics.

Dr Paul Wood from CSIRO's Division of Animal Health in Victoria says patients were given a one-year course of antibiotics. If the antibiotics were not taken properly, the tuberculosis bacterium would have been exposed to reduced levels of the drug. This was effectively selecting for a multi-resistant strain.

New and deadly strains of tuberculosis have been discovered in a number of

countries. Some are untreatable and can kill within six weeks of infection.

'In Australia we have strains resistant to two or three antibiotics. Overseas there are strains resistant to six to nine,' Wood says. 'Australia is likely to eventually get the multi-resistant strains. Better methods of early detection are now critical in fighting the disease.'

In response to this need, CSIRO and CSL Limited have developed a new diagnostic kit to replace the 100-year-old Mantoux test, which can cause adverse reactions, is slow, and requires two visits from the patient.

The new test is non-invasive, rapid and requires one visit only. All that is needed is a

blood sample, and the results are available in only a day.

This new technology was originally developed (with financial support from Australian cattle producers) to diagnose bovine tuberculosis. CSL is conducting clinical trials of the new test for tuberculosis in humans in several Australian hospitals.

There is a large international market awaiting the development of this new diagnostic assay for tuberculosis.

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