

# Food analysing services of QDPI

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Plate 1. Some of the range of dairy products regularly monitored by Food Research and Technology Branch.

Encouraging the production of high quality foods, efficiently and consistently across local and export markets, is the function of the Food Research and Technology Branch of QDPI. No food is outside the range of the branch and consideration is given to all requests for assistance from food industries.

## Analytical Services section

The branch provides an expert, comprehensive and confidential analytical service. The Analytical Services Section has four laboratories at Hamilton in Brisbane and one at Malanda in north Queensland.

The five laboratories provide a wide range of chemical and microbiological analyses for the food industry and the section maintains its position as a leader in food analysis by constantly improving existing methods and establishing new techniques.

The service is available to the food industry on a fee-for-service basis. Services available to industry include:

- NATA-accredited laboratories for a wide range of food analyses

- comprehensive microbiological testing, including coagulase-positive staphylococci, coliforms, *Listeria*, *Salmonella*, *Vibrio* and *Yersinia*
- compositional analysis (including moisture, fat, protein, carbohydrates, ash, pH, acidity, fatty acid profiles) of major food groups (meat, fish, cereals, fruit and vegetables and dairy products)
- evaluation of product quality
- sensory evaluations
- advice on food analysis methodology
- evaluation of new instrumentation
- extensive library and literature searching facilities.

This service is supported by a high level of analytical proficiency verified through regular internal quality assurance programmes and independent audits by the National Association of Testing Authorities (NATA).

## NATA-registered testing

NATA registration specifies areas of laboratory competence necessary for

accreditation. Terms of registration give an indication of the scope of work and types of methods the laboratory is able to carry out. Because granting of registration is subject to regular assessment, usually every two to three years, a laboratory must maintain a high level of analytical proficiency. It follows that not every laboratory is able to perform NATA-certified work and those laboratories which do have NATA registration enjoy prestige among their peers.

Analytical Services Section has held NATA accreditation for over 30 years and holds registration for chemical and microbiological tests on the following food groups:

- nuts and nut products
- dairy products
- meat and meat products
- fish, crustaceans and molluscs
- fruit, jams and other fruit products
- vegetables and vegetable products
- alcoholic beverages
- edible fats and oils
- margarine, and
- eggs and egg products.

NATA certificates provide manufacturers, agents, importers, exporters and government with independent test results obtained by strict adherence to recognised procedures.

## Dairy Industry service

The branch (formerly the Dairy Research Branch) has been associated with milk quality testing for the dairy industry since the first dairy research laboratory was set up in 1935. However, this role has changed over the last few years and more reliance on statewide liquid milk quality monitoring has been placed on information from industry laboratories.

To assist in this regard, the section operates a number of programmes for the dairy industry.

### Product testing

Chemical and microbiological tests are carried out on a wide range of dairy products including milk, cream, butter, yoghurt, ice-cream and desserts. Last year, some 12 000 tests were performed on 3400 samples.

As part of this programme, all Queensland dairy products are regularly monitored for pesticide residues.



**Plate 2. An infra-red analyser used for the simultaneous determination of fat, protein and lactose in dairy products.**



**Plate 3. Analysis of sugars in food by high performance liquid chromatography.**

### Collation of factory test results

Results of milk testing by industry laboratories are received monthly and processed on the branch computer, then distributed to field staff and statutory authority personnel for follow-up action and advice to industry.

### Interlaboratory proficiency testing

Over 20 dairy laboratories participate in this programme in which the laboratories are asked to test identical samples prepared by the section. Their results are statistically analysed to compare each laboratory's result with all others. This checks the testing accuracy of each of the laboratories.

### Standards for milk testing

A range of standards are prepared, analysed and distributed to dairy industry laboratories to calibrate milk-testing instruments which test dairy farmers' milk. Standards provided include fat, protein, lactose, freezing point and iodine.

The aims of the last two programmes are to improve and standardise the testing done by dairy industry laboratories.

### Research

The section assists the research work of other sections of the branch. It also undertakes research activities in its own right. Recent research projects have included:

- the development of methods for the detection of antibiotics in meat
- studies on sources of heavy metal contamination in seafood
- surveys on the microbiological quality of cheese and poultry
- the development of methods for the detection of irradiated food
- studies on the correct use of sulphur dioxide for treatment of prawns.

### Equipment

The Food Research and Technology Branch laboratories are equipped with an extensive range of scientific equipment including a Malthus microbiological growth analyser, spiral plater, automatic colony counter, high performance liquid chromatographs, gas chromatographs, computerised densitometer, Iatrosan TLC analyser, ultracentrifuge and food texture testing machine.



**Plate 4. Examination of blood agar plates for the presence of the food-poisoning microorganism *Listeria*.**

### Computer support

Computer support is a key element in laboratory management and the section has access to personal computers and a VAX 11/730 minicomputer for compilation of dairy factory test results. Future developments call for the acquisition of a special powerful software package which will deal with all sample details and print the analytical results and invoices. This also has a powerful 'query' facility for phone enquiries.