



# OCEANIAFOODS: national, regional and international activities

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All participating agencies and individuals agree that OCEANIAFOODS is successful and effective in its operation as a regional data centre. At the first OCEANIAFOODS Conference in 1987 it was acknowledged that there was a great need to improve data quantity and quality in the three basic areas of a food composition programme: data generation, data compilation and data dissemination. Australia and New Zealand with their existing infrastructures made significant and steady progress, and now have substantial bodies of data available to users as printed tables, data files and software applications packages. The South Pacific Commission accepted the responsibility for food composition work in the 22 island countries it represents, and New Zealand and Australia agreed to assist wherever possible. The Pacific Islands have new food composition tables, a software applications package and analytical laboratories with secure funding for generating more data. Australia and New Zealand have achieved their progress as part of their governments' science and health programmes, while the Pacific Islands have achieved their progress with assistance from their partners in OCEANIAFOODS, from INFOODS directly, and from several donor agencies. Intra-regional and international co-operation and collaboration have contributed to successes in the region. Copyright © 1996 Elsevier Science Ltd

## BACKGROUND

For the first OCEANIAFOODS Conference (English & Lester, 1987) the stated objectives were: (i) to review the state of food composition data in this region known as Oceania; (ii) to establish a network of individuals and institutions in the region; and (iii) to formulate action programs to improve inter-regional collaborations. It was acknowledged that there was a great need to improve data quantity and quality in the three basic areas of a food composition programme: data generation, data compilation and data dissemination. Australia and New Zealand had appropriate and functioning infrastructures for effective data generation, and were committed to developing their skill and resource base in data compilation and data dissemination. The Pacific Island countries were not so well structured for this type of activity.

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An ambitious set of recommendations was put forward at the end of this first conference. There was a commitment by all parties that a new collaborative network, OCEANIAFOODS, would be established and would operate as a regional committee of INFOODS, with the group and the national agencies retaining their own identities and priorities. It was also agreed that:

- the South Pacific Commission in New Caledonia would accept responsibility for developing a programme to serve the 22 island countries it represents, with New Zealand and Australia agreeing to assist wherever possible;
- liaison would be established with other Regional Data Centres, particularly ASEANFOODS;
- regular meetings would take place, and a rotating convenorship would be established; and
- a series of collaborative activities would be initiated.

These recommendations were incorporated into the normal operation of the organizations undertaking the

national food composition programmes, and have developed and evolved over time. The results of the implementation of these, and subsequent recommendations, were reported at the second conference in 1989 (Commonwealth Department of Community Services and Health, 1991), the third conference in 1991 (Burlingame & Monro, 1993) and the fourth conference, held in 1995 (Aalbersberg, 1996).

## PROGRESS IN DATA GENERATION

### Data generation in Australia and New Zealand

Australia and New Zealand have similar approaches to data generation. Typically, comprehensive nutrient analyses are undertaken on major categories of foods. As new foods from previously analysed categories are established on the market, they are also included in analytical programmes. Previously neglected nutrients come into prominence, and these are measured in certain foods if they are relevant because of their high consumption or the opinion that they might contain nutritionally significant amounts of the nutrient in question. Generally, projects are developed with wide consultation, extending to the specifications of the sampling plans.

A comprehensive range of nutrients, analysed mainly by AOAC methods, includes proximates (water, protein, available carbohydrate constituents, fat, dietary fibre and ash), vitamins, elements, sterols, fatty acids, amino acids and several individual carotenoids. In New Zealand, dietary fibre is measured as soluble and insoluble non-starch polysaccharides (Englyst & Cummings, 1988; Englyst *et al.*, 1992). A regional trial of a newly developed fibre method (Monro, 1993) with improved physiological relevance, and a new, simple calorimetric carotenoid method (Aalbersberg & Singh, 1996) are being undertaken.

Data are generated for multiple purposes, but always so that they are suitable for inclusion in a food composition database. Considerable liaison and collaborations take place between government agencies involved in regulation and research, universities and food industries to ensure, as far as is practicable, that maximum advantage is taken of food analyses.

Sound laboratory practices are implemented, most laboratories have their routine methods 'certified', and interlaboratory trials are undertaken with AOAC, AOCS and also with ASEANFOODS, to assure the quality of the information.

### DATA GENERATION IN THE PACIFIC ISLANDS

A tremendous amount of high-quality data have been generated for root crops (Bradbury & Holloway, 1988) and green leaves (Bailey, 1992). A large body of data also exists for foods imported into the Islands from Australia (National Food Authority, 1988–1995), New Zealand (Burlingame *et al.*, 1994; FoodInfo, 1995;

Quigley *et al.*, 1995) and the United States (USDA, 1993). However, there are still important gaps in the data, in particular, for uncultivated nuts and fruits, pandanus and coconut products, Pacific Island cooked dishes, breadfruit dishes, shellfish and fish.

The project 'Nutrient Composition of Some Pacific Islands Food Crops and Bushfoods' is a joint project of the University of the South Pacific, the Australian Centre for International Agricultural Research (ACIAR), the Australian Government Analytical Laboratory (AGAL), the French Research Institute (ORSTOM) and the South Pacific Commission (SPC). It commenced in early 1994 and aims to help fill the gaps in the present food tables by undertaking analyses on important uncultivated nuts and fruits for which no reliable data exist. In addition, planning is underway for analyses of commonly eaten Pacific Island mixed cooked dishes, important atoll foods and other foods not well covered in the present tables. It is envisaged that at least 40 foods per year will be comprehensively analysed.

The Asia Pacific Food Analysis Network has been very active and successful in training laboratory personnel from several Pacific Island countries in analytical techniques. Efforts are being made to further assist Island countries in 1995–1996, Papua New Guinea in particular, is developing the facilities and expertise in food composition analyses.

## DATA COMPILATION

### Data compilation in Australia

In mid 1995, the Australia Food Composition Data Bank (ANDB) contained over 1800 food records with complete information for 29 core food components (i.e. 52 300 mean values) and an additional 78 000 values for other components. There are 108 different components contained in the database.

Australia is continuing to progress its food composition programme, particularly in preparation for the completion of the 1995–1996 National Nutrition Survey, now being conducted. Over the next year, the amount of data stored in ANDB will double to enable the derivation of nutrient intakes from survey. For the first time, the databank will store a significant proportion of inputted values instead of primarily Australian analyses. Australian analytical data are used as a regional resource and contribute to the data of other countries in the region. An integral component of this major expansion is the development of a new computer system for data storage, processing and reporting. The original databank was a mainframe system, which was given periodic enhancements. The data files are now being transferred to a client-server environment, which will permit regular system upgrades and allow easier implementation of new features that take advantage of improvements in software and hardware technology.

### Data compilation in New Zealand

In mid 1995, the NZ Food Composition Database contained over 1600 food records with complete information for 54 core food components, and an additional 70 000 values for other components. Each component is represented by an INFOODS tagname (Klensin *et al.*, 1989), and there are 423 contained in the New Zealand database. For example, there are only three records that contain data for arabinose, 10 with data for quinic acid, 128 with data for lead, 139 with data for fatty acid 22:6n-3, 600 with data for glutamic acid and 1638 with data for total available carbohydrate (this being one of the 'core nutrients').

The original data compilation system had been developed in MS DOS-based Advanced Revelation 3.01. A new version is being developed using a variety of tools for development under Windows and operation in a client-server environment. Data are compiled in a way that facilitates the interchange within the INFOODS system. The system architecture is completely compatible with national goals and uses of the information.

The system has many features for capturing, manipulating, evaluating, auditing, viewing and outputting food composition data and all associated documentation. It also includes links to other modules for project management from sampling plan to final reports, International Interface (LanguaL), food industry market information, methods details and references, etc.

### Data compilation in the Pacific Islands

Slow but steady progress was made in the developing Pacific Island countries; however, since 1993 that progress has accelerated. INFOODS has provided computer hardware and, in a three-way partnership with Crop and Food Research and the SPC, has provided assistance with the development of the Regional Data Centre, which is shared between Fiji and New Caledonia.

The Pacific Islands database has 894 food records, and a total of 25 500 mean values. The information is derived from many different published and unpublished sources and was compiled in a joint project by the SPC, the New Zealand Institute for Crop and Food Research and the International Network of Food Data Systems (INFOODS).

New Zealand's nutritional information system was used for the SPC database. Hence, all the features important for intra-regional and international interchange of food composition data, for example tag-names, are integral.

### DATA DISSEMINATION

Data are disseminated in a variety of ways, for a variety of purposes and for many different types of users. In addition to papers in the refereed scientific literature, and reports targeted to the food industries, database products developed for the end users are mainly books

and computer products. In Australia, routine data dissemination takes the form of the Composition of Foods, Australia (on-going series), concise printed tables, simplified printed tables, NUTTAB (data files) and applications' software+data files. In New Zealand, routine data dissemination takes the form of the Composition of NZ Foods series, unabridged printed tables, abridged and concise printed tables, FOODfiles (data files), applications' software+data files and CD-ROMs with food images. In the Pacific Islands, products include abridged printed tables and applications' software+data files. An extensive reference list can be found on the INFOODS WorldWideWeb server (URL = <http://www.crop.cri.nz/crop/infoods/infoods.html>).

In New Zealand and Australia, the books are computer products which are sold to the user. In the Islands, the tables have been supplied free of charge to more than 300 people in 22 Pacific Island countries; and 18 computer programs have been issued to 30 people in 17 island countries. However, these products are sold to people outside the islands.

### REGIONAL AND INTERNATIONAL COLLABORATIONS

Wide-ranging consultation and collaborations take place, nationally, regionally and internationally, involving members of OCEANIAFOODS. Some of the important ones are highlighted below.

- UNU/FAO/INFOODS.
- Regional and international donor agencies.
- Interlaboratory trials.
- Data interchange.
- Standards development.
- Expert committee activities.

### CONCLUSION

In the 8 years since the first meeting, significant progress has been made and reported, up to and including the fourth OCEANIAFOODS Conference held in April 1995. New Zealand and Australia now have substantial bodies of data, available to users in the form of printed tables, data files and software applications packages. The Pacific Islands have new food composition tables (Dignan *et al.*, 1994), a software applications package and analytical laboratories with secure funding for generating more data. Australia and New Zealand have achieved these developments as part of their governments' science and health programmes, while the Pacific Islands have achieved their progress with assistance from their partners in OCEANIAFOODS, from INFOODS directly and with assistance from several donor agencies. All these developments permit countries in the OCEANIA region, and the region as a whole, to participate in effective data interchanges and contribute to the knowledge base in the field of food composition.

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