SAFOODS and SAFDAG Activities in South Africa

Petro Wolmarans, Joelaine Chetty and Natasha Danster-Christians

Nutritional Intervention Research Unit
South African Medical Research Council
petro.wolmarans@mrc.ac.za
Introduction and aim

Overview of the South African Food Data System (SAFOODS)

SAFOODS activities

The South African Food Data Advisory Group (SAFDAG)

Food composition data generators

Advancing the science of food composition
Introduction

• The Nutritional Intervention Research Unit of the Medical Research Council is the organisation from where food composition activities are managed, coordinated and driven in South Africa.

• Other role-players, e.g. universities, research organisations and the food industry are increasingly becoming involved.

• The focus of the South African Food Data System (SAFOODS) is to collaborate nationally to compile a country-specific food composition database.
Aim of presentation

• To share information on the activities of the South African Food Data System (SAFOODS) and the South African Food Data Advisory Group (SAFDAG).

• To discuss the important role of the food industry and others in generating information on the nutrient composition of foods for inclusion in SAFOODS.
• One of the intramural research units of the Medical Research Council

Research focus areas of the Nutritional Intervention Research Unit

- Micronutrient deficiencies
- Public health nutrition
- Fatty acid research
- Food Composition (SAFOODS)
- Analytical laboratory
Activity areas of SAFOODS

Present staff members: Dr P Wolmarans; Ms J Chetty
Importance of food composition data

Data generators

Analytical food laboratories

SAFOODS
Food composition data

Quantitative Dietary intake studies

Nutritional risk assessment

Nutrition policy

Food fortification

Food Based dietary guidelines

Prevention and treatment of nutrition related diseases

Food industry

Food product development

Food labelling
USERS and USES OF THE FOOD COMPOSITION DATABASE

- **Researchers** - National Food Consumption Survey
- **Researchers, students** - Dietary intake studies/research projects, nationally

- **Food industry** - National food fortification programme
- **Food Industry** - New product developers

- **Health professionals** - dietitians, medical doctors – dietary intervention

- **Students** - Training tool students

- **Food service managers** - menu planning

- **General public** - information on nutrient composition of food
Importance of a country-specific food composition database

- Representative of the foods consumed by South Africans

- Contains country specific foods and recipes
  - Traditional
  - Indigenous
  - Variety of foods
  - Brand specific if food industry agrees

- Required for appropriate analysis of the dietary intake of the population
Sources of nutrient information in SAFOODS

• **Chemical analysis** (golden standard)
  – Appropriate methods (e.g. food matrix and nutrients)
  – Accurate, precise, repeatability
  – Trained analysts

• **Published data, e.g.**
  – Other food composition databases
  – Scientific publications
  – Theses, etc.

• **Calculations**
  – Appropriate conversion factors
  – Similar foods (informed ‘assumptions’)
  – Recipe calculations
Different sources of information (%)
Condensed Food Composition Tables 2010

- SA: 36.9%
- US: 27.4%
- UK: 7.0%
- Recipes: 28.5%
- Other: 0.2%
South African Food Data System (SAFOODS)

Vision
Building a comprehensive food composition database to improve nutrition in South Africa

Specific objectives:
- Compile country-specific food composition data for South Africa;
- Increase number of foods with data of South African origin;
- Collaborate with food composition data generators;
- Encourage food industry involvement;
- Advance the science of food composition;
- Educate users on the correct use of food composition data;
- Encourage quality control at food analysis laboratories.
SAFOODS activities

• Compiling of food composition data
  – Collect, evaluate and compile data

• Produce products from SAFOODS, e.g.
  – Printed food composition tables
  – Dietary analysis software programmes

• Promotion of the science of food composition
  – Scientific publications
  – Capacity development, e.g. student training

• Collaborate internationally on food composition activities
SAFOODS products

• Books with tables containing the nutrient information on foods.

• Dietary analysis software programme, FoodFinder3.

• Online access to nutrient information on food items.
Condensed Food Composition Tables for South Africa

- Published April 2010
- Combination of information from:
  - 1991 FCT tables
  - Fruit and Vegetables supplement
  - Milk and Milk Products, Eggs, Meat and Meat products
- New chemically analysed data on unfortified and fortified:
  - maize meal;
  - wheat flour.

1 472 food items
36 components
Different data sources
**Software: FoodFinder3**

**Users:** Researchers, universities, dietitians, food industry
Educate users on the correct use of food composition data

- National and international congresses: scientific presentations/posters

- Information stands at congresses
  - Books
  - Pamphlets
  - Information sharing

- Lectures to university students
  (on invitation)
  - Dietetic
  - Nutrition
  - Food science

IUFoST 2010 Cape Town, SA
The South African Food Data Advisory Group (SAFDAG) was formed in 2008.

**Vision**
To advance the science of food composition in South Africa.

**Main responsibilities:**
Advise and assist the food composition data compilers at the South African Medical Research Council (MRC) to:
- Obtain and generate food composition data for compiling a country-specific food composition database;
- Identify user needs.
SAFDAG participants 2008

- Department of Health, academia, food industry, universities, research councils

Participants at the workshop - November 2008
SAFDAG structure and activities

Activities
Workshops/meetings to focus on strategic planning and identify activities required.

Main activity of 2011
SAFOODS and SAFDAG symposium on 9 November 2011
### SAFDAG working groups and chairpersons

<table>
<thead>
<tr>
<th>Secretariat</th>
<th>Dr P Wolmarans</th>
<th>Medical Research Council</th>
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<tbody>
<tr>
<td><strong>Working group</strong></td>
<td><strong>Responsible person</strong></td>
<td><strong>Organisation</strong></td>
</tr>
<tr>
<td>Finances</td>
<td>Dr N Bhagwandin</td>
<td>MRC</td>
</tr>
<tr>
<td>Sampling procedures</td>
<td>Prof H Schönfeldt</td>
<td>University of Pretoria</td>
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<tr>
<td>Data generation</td>
<td>Dr I van Heerden</td>
<td>Agricultural Research Council</td>
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<td>Laboratories</td>
<td>Dr P Van Jaarsveld</td>
<td>MRC</td>
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<tr>
<td>Food Composition</td>
<td>Dr P Wolmarans</td>
<td>MRC</td>
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<td>Compilation</td>
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<td>Software product development</td>
<td>Prof C Seebregts</td>
<td>MRC</td>
</tr>
<tr>
<td>Education/users</td>
<td>Prof E Wentzel-Viljoen</td>
<td>University of North-West</td>
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Increase number of foods with country-specific information

• Increasing the number of food items with nutrient information of South African origin is the main focus of SAFOODS activities.

• Significant cost of food analysis make regular updating difficult.

• Formation of national partnerships required.

• Collaboration strategies to obtain chemically analysed data for SAFOODS
  – SAFDAG’s role
  – Research Councils
  – Universities
  – Food industry
SAFDAG’s role in data generation

• Assist with identifying existing data that could be used for inclusion in SAFOODS:
  – Data generated by SAFDAG members;
  – Data generated by others, but not published yet;
  – Data generated by others and published, but not known to SAFOODS.

• In future, collaborate with SAFOODS compilers in compiling the data for the database.
Food composition data generators

- Agricultural Research Council
  - Milk and milk products
  - Meat and meat products

- Universities
  - Meat from wild animals
  - Fish

- Other research activities
  - Traditional food
  - Indigenous food
Food composition data generators

- Agricultural Research Council and Universities

Publications and theses on South African meat food composition data
Food industry involvement

• The role of the food industry is important in the compilation of a country-specific food composition database.

• New food labelling legislation provides opportunities for food composition data generation for SAFOODS.

• Collaboration between SAFOODS and the food industry could contribute to the increase of the number of food in the database with country-specific nutrient information.

• Chemical analysis of single ingredient agricultural commodities for nutrient content, could improve recipe calculations for labelling purposes.
Nutrient information from the food industry for SAFOODS

- Preferred source of data

Not ideal for compilation

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**Nutritional information**

<table>
<thead>
<tr>
<th>Average values</th>
<th>Per 100 g</th>
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<tbody>
<tr>
<td><strong>Energy</strong></td>
<td>508 kJ</td>
</tr>
<tr>
<td><strong>Protein (animal/plant?)</strong></td>
<td>6.2 g</td>
</tr>
<tr>
<td><strong>Carbohydrate</strong></td>
<td>9.5 g</td>
</tr>
<tr>
<td>of which total sugars</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total fat (total fat/total lipids?)</strong></td>
<td>6.6 g</td>
</tr>
<tr>
<td>of which:</td>
<td></td>
</tr>
<tr>
<td>Monounsaturated fatty acids</td>
<td>2.0 g</td>
</tr>
<tr>
<td>Polyunsaturated fatty acids</td>
<td>0.4 g</td>
</tr>
<tr>
<td>Saturated fatty acids</td>
<td>4.2 g</td>
</tr>
<tr>
<td>Total dietary fibre</td>
<td>2.9 g</td>
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Importance of food composition data of high quality data

• Proper sampling methods
  – Representative
  – Sample size

• Importance of appropriate analytical methods
  – Dietary fibre
  – Folic acid and folate

• Correct reporting of data
  – Moisture content (wet/dry weight)
  – Correct unit of measure (mg/100 g OR µg/100 g)
Advance the science of food composition

- SAFOODS website: http://safoods.mrc.ac.za

- Symposium on food composition - 9 November 2011
Symposium 9 November 2011

Aims:

- Provide information on the food composition activities of SAFOODS and SAFDAG.
- Share important scientific information on dietary fibre, glycaemic carbohydrate, total lipids (fat), folate and folic acid.
- Motivate and invite all important role-players to collaborate in generating good quality data on the nutrient composition of food for inclusion in SAFOODS.
Thank you