

USDA Update  
Frank N. Hepburn  
Human Nutrition Information Service

Recent publications and publication plans for 1986:

HG-72     Nutritive Value of Foods (published)  
  
AH-8-13   Beef Products (in press)  
AH-8-14   Beverages (published)  
AH-8-15   Finfish and Shellfish Products (in preparation)  
AH-8-16   Legumes (in preparation)  
  
Provisional Table on Omega-3 Fatty Acids (published)  
Provisional Table on Vitamin K (in press)  
Provisional Table on Sugars (in preparation)  
Provisional Table on Vitamin D (in preparation)

Recent machine readable tapes made available through NTIS:

USDA Nutrient Data Base for Individual Food Intake Surveys,  
Release 2, 1986 (accession number PB86-206299/HBF)

Data sets used to create USDA Nutrient Data Base for Individual  
Food Intake Surveys, Release 2 (accession number PB86-206281/HBF):

1. Recipe File for Release 2 of USDA Nutrient Data Base for  
Individual Food Intake Surveys
2. Primary Nutrient Data Set for USDA Nationwide Food  
Consumption Surveys, Release 1
3. USDA Table of Nutrient Retention Factors, Release 1

Plans for publications in 1987:

AH-8-21   Fast Foods  
AH-8-17   Lamb, Veal and Game  
AH-8-19   Sugars and Sweets  
HG-90     Conserving Nutritive Values (revision)  
HERR-     Sugars in Foods  
Provisional Table on Dietary Fiber

Plans for publications in 1988:

AH-8-18   Baked Products  
AH-8-20   Cereal Grains, Pastas, Snacks  
AH-8-22   Mixed Dishes  
AH-8-23   Miscellaneous Foods  
AH-102    Food Yields (revision)

We are using information available in the Primary Nutrient Data Set, together with consumption data from the 1985 CSFII to set priorities for foods and nutrients to be studied in analytical studies. The source code in the Primary Nutrient Data Set provides information on the relative strengths and weaknesses of the data; the food consumption data provides information on the importance of foods in supplying each nutrient to the daily diet. We have submitted plans for several contracts based on these factors, which will strengthen the comprehension and validity of our data bases. They are, of course, subject to the availability of funds.

We continue to work closely with the Nutrient Composition Laboratory (NCL) at Beltsville, Maryland, in efforts to improve and develop new analytical data. Two of the current cooperative efforts include a study on nutrients in sweet bakery foods and a major study on measuring the content and variability of selenium in foods in the U.S. The plan for the selenium study was developed cooperatively, using information on selenium content of foods culled from the literature by Nutrient Data Research (NDRB) staff and evaluated by NCL staff. By adding selenium values to the Primary Data Set, the contribution of foods to the selenium intake of individuals in the 1985 CSFII study was measured. The NCL is now in the process of collecting some of the samples and preparing them for analysis. The study incorporates built-in quality control checks and employs the use of reference materials to assure the validity of results. We believe this study will serve as a model for establishing a standard protocol for generating reliable data.

An update on the assessment of analytical methodology has been provided by Dr. Beecher and is appended to this report.

STATE OF DEVELOPMENT OF METHODS FOR NUTRIENTS IN FOODS  
 Nutrient Composition Laboratory  
 BHNRC, ARS, USDA  
 Beltsville, MD 20705  
 April 1986

| Nutrient category                     | State of Methodology <sup>a/</sup>  |   |  |  |
|---------------------------------------|---|---|--|--|
|                                       | Adequate  | Substantial   | Conflicting  | Lacking  |
| Carbohydrates,<br>fiber<br>and sugars |   | Individual<br>sugars<br>Fiber<br>(AOAC)<br>Starch           | Fiber<br>components  |  |
| Energy                                | Bomb calorimetry  |   | Calculated   |  |
| Lipids                                |   | Cholesterol<br>Fat (total)<br>Fatty acids<br>(common)       | Sterols<br>Fatty acids<br>(isomers)  |  |
| Minerals/Inorganic<br>nutrients       | Calcium<br>Copper<br>Magnesium<br>Phosphorus<br>Potassium<br>Sodium<br>Zinc | Iron<br>Selenium  | Arsenic<br>Chromium<br>Fluorine<br>Iodine<br>Manganese                     | Cobalt<br>Molybdenum<br>Silicon<br>Tin<br>Vanadium<br>Molecular<br>species |
| Proteins and<br>amino acids           | Nitrogen<br>(total)   | Amino acids<br>(most)                                       | Amino acids<br>(some)<br>Protein<br>(total)                                |  |
| Vitamins                              |   | Niacin<br>Riboflavin<br>Thiamin<br>Vitamin B-6<br>Vitamin E | Vitamin A<br>Vitamin B-12<br>Vitamin C<br>Vitamin D<br>Pantothenic<br>acid | Biotin<br>Carotenoids<br>(pro-vit.A)<br>Choline<br>Folacin<br>Vitamin K    |
| Other                                 |   |   | Phytate  | Carotenoids<br>(non-vit.A)   |

<sup>a/</sup> Description of methodology states

| Factors           | Adequate        | Substantial         | Conflicting         | Lacking             |
|-------------------|-----------------|---------------------|---------------------|---------------------|
| Accuracy          | Excellent       | Good                | Fair                | Poor                |
| Speed of analysis | Fast            | Moderate            | Slow                | Slow                |
| Cost per analysis | Modest (<\$100) | Modest to high      | High                | ?                   |
| Development needs | [ ---           | Method modif.       | Method develop.     | Method develop.     |
|                   |                 | Extraction<br>proc. | Extraction<br>proc. | Extraction<br>proc. |
|                   |                 | Applications        | Applications        | Applications        |