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Measuring Food Consumption

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Changes in the per capita consumption of selected foods are reported in the *National Food Review* and in other USDA reports. Although these are currently the best data available, they are more appropriately thought of as the domestic per capita disappearance of foods. The distinction may be subtle, but it is an important one.

In this article, the computational technique now used to develop these estimates is reviewed. Its purpose is twofold. First, it is intended to help clarify the statistics for users. Second, we hope it will point to the important need for improved data and techniques in the area of food use. Without better data on actual food use, the United States will continue to have difficulty accurately monitoring the nutritional adequacy of the population.

The Monitoring System

Measuring and forecasting food consumption on a timely basis is done by the Economics, Statistics, and Cooperatives Service of USDA. Consumption statistics are important in the agricultural data system since they provide a benchmark for the adequacy of U.S. agricultural production and food stocks relative to use. The data series is also used to provide assessments regarding the nutritional adequacy of the U.S. diet.

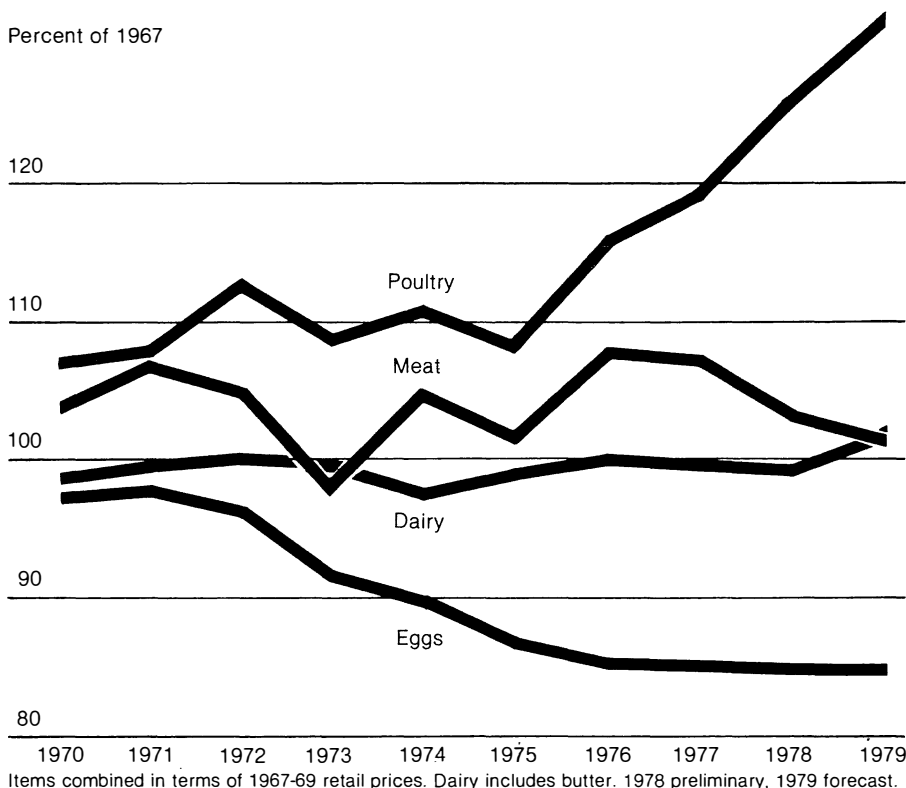
The USDA system measures all food in the commercial system. In addition, estimates for noncommercial production—including farm and home garden production—are included for many items.

Consumption is estimated at the national level for 260 foods. Estimates are for food used at home and in restaurants and other away-from-home outlets. The use of supplements (vitamins, stabilizers, etc.) is not measured.

The data system is guided by a commodity flow concept. The concept starts with the agricultural products produced on U.S. farms, caught by U.S. fishermen, or imported from abroad. Their flow is followed as they move to manufacturing plants for processing and/or preservation and then on through the distribution system to retail stores or eating places and to consumers. The availability of data is such that civilian food use is calculated as a residual after other

Per Capita Consumption of Selected Livestock Products

Percent of 1967



measured uses are deducted from the total supply. Thus, it is often called civilian "domestic disappearance."

The basic tool is a supply and utilization balance sheet for each commodity. The supply of each food consists of beginning stocks, production, imports, and in-shipments from Territories (mostly Puerto Rico). Utilization consists of exports, shipments to Territories, Government purchases for military use and export, nonfood use, food use, and ending stocks.

Estimates of consumption (disappearance) are prepared at the primary distribution level, which is dictated for each commodity by the structure of the marketing system and the availability of data. For some, it is at the first handling level—the farm gate. But for most processed commodities, the primary distribution level is at the processing or manufacturing plant.

Once the primary level has been

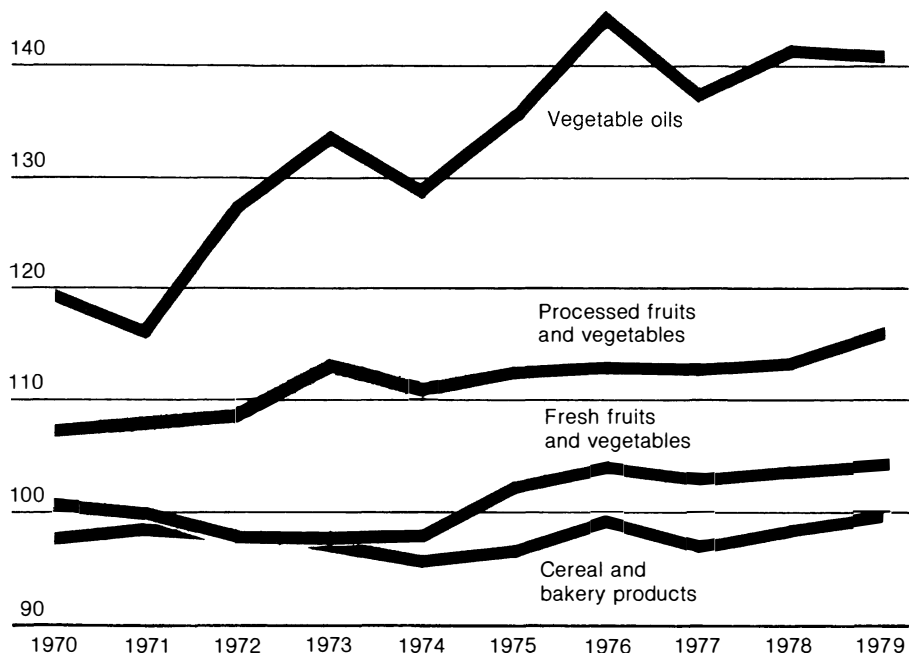
selected, quantities of all other components in the balance sheet for that commodity are converted to the primary weight basis using appropriate conversion factors. For example, the primary distribution level for red beef is the slaughter plant, so all quantities are converted to carcass weight.

Retail weight conversion factors, which translate from primary distribution weight to retail weight, allow for subsequent processing and losses in the distribution system. Fresh beef, for instance, is estimated to lose 26 percent of its weight from carcass to retail cuts.

For some uses, a more desirable computation basis is edible weight. That calculation avoids the problems that arise because of the shift from fresh to processed products such as fruits and vegetables. While the primary system is dependent upon retail weight, per capita consumption on an edible basis has been calculated for special reports.

Per Capita Consumption of Selected Crop Products

Percent of 1967



Items combined in terms of 1967-69 retail prices. Processed fruits and vegetables include potatoes and sweet potatoes. Fresh fruits and vegetables exclude melons. 1978 preliminary, 1979 forecast.

The Data Sources¹

The food products supply and utilization data system is entirely dependent upon data collected for other purposes. Funds to obtain specific data on food consumption over time have not been available to date. Periodic surveys of food consumption or expenditures do provide useful checks.

Data on farm production and stocks come primarily from the Statistics program of ESCS, which provides some information on product usage and the

production of manufactured dairy products. Data on production of other processed products are obtained from other Government and private sources, including Current Industrial Reports of the Bureau of the Census (for flour and fats and oils) and sugar utilization from USDA's Agricultural Marketing Service. Where comprehensive data are available from trade associations, particularly on canned and frozen fruits and vegetables, it is used.

Foreign trade data are compiled by the Bureau of the Census from Customs Service reports. Military use is reported by the Department of Defense. Local procurement is estimated by USDA, primarily for milk and bread.

The scarcity of data presents a major problem. Most available current data are concentrated near the farm and primary processing levels. Presently, there are little or no data available for many further-processed products, such as bread, other bakery products, and soup.

In short, relatively good data exist for many of the ingredients but not for final products.

Nutritive Value of the Food Supply

The Consumer and Food Economics Institute of the Science and Education Administration, USDA, uses ESCS's per capita consumption figures to compute the nutritive value of the U.S. food supply.² The series shows trends in supplies of major nutrients which are related to changing food use patterns—the net nutritional effect of decreases in consumption of some foods and increases in others.

To obtain estimates of the nutritive value of the food supply, quantities of food consumed per capita per year are multiplied by the appropriate food composition values and then adjusted to a daily rate. No deduction is made for loss or waste of food in households or for destruction or loss of nutrients in the preparation of food.

Like all time series, such data are more useful as indicators of change over time than of absolute levels at any one time. In other words, this series provides an indication of whether or not Americans, on the average, are improving their diets over time. It is not a measure of nutritional adequacy.

Future Needs

The emerging importance of food and nutrition as primary national concerns highlights the need for improved data on actual food use. Although the system in place today has served well, it is increasingly the subject of debate. As the food system becomes more complicated and foods are less easily identifiable with their farm product base, the obvious inadequacies of the "disappearance" system discussed in this paper will be revealed. USDA will be challenged in the decade ahead to respond to these contemporary needs. ■

References

1. Manchester, Alden C. "Eating More Vegetables," *National Food Situation*, March 1977, pp. 34-35.
2. Watt, Bernicek, and Annabel L. Merrill, et. al. *Composition of Foods . . . Raw, Processed, Prepared*, USDA, ARS, Ag. Handbook 8, Rev. Dec. 1963, 190 pp.

¹A more detailed account of the methods used and data sources is provided in Major Statistical Series of the U.S. Department of Agriculture, *How They Are Constructed and Used*, Volume 5, and *Consumption and Utilization of Agricultural Products*, USDA, Agr. Handbook No. 365, April 1972.

²See article in December 1978 *National Food Review* detailing the nutritive content of the food supply for 1978.