

What We Eat in America--Does Season Make a Difference?

Availability influences consumers' selection of the foods they eat. Modern technology and agricultural research advances have made seasonal foods obtainable year round and throughout the United States. Yet, intakes of some foods do vary by season.

Mary Y. Hama, U.S. Department of Agriculture¹

The objective of this study is to determine seasonal effects on food intakes. The information is of interest to food producers, marketing specialists, nutrition educators, and consumer economists. Seasonal fluctuation in food intakes is an important consideration in analyzing food demand and in designing food consumption surveys. Methodologists need to know whether year-round data on food consumption are required or whether shorter periods of data collection will suffice.

Methods

This study used data from the first year of the 1994-96 Continuing Survey of Food Intakes by Individuals (CSFII), commonly called the *What We Eat in America* survey. The survey was conducted in all months of the year and about 5,500 participants of all ages were surveyed across the United States. Data from 5,311 respondents who provided two nonconsecutive days (3 to 10 days apart) of intakes were used. Season was determined by the first day of intake. The seasons were defined as *winter* for January, February, or March; *spring* for April, May, or June; *summer* for July, August, or September; and *fall* for October, November, or December. Sampling weights were applied to obtain mean food intakes of the U.S. population.

Detailed food descriptions and quantities were provided by the respondents. Foods reported in the CSFII 1994 were combined into 72 food groups and subgroups. Then, mean food intakes per day were examined in two ways: (1) comparison of seasonal indexes by season, and (2) assessment of significant differences in mean intakes between the highest and lowest average intake seasons. SAS and SUDAAN were used to test for significant differences.

Results

The highlights of the seasonal analysis from the CSFII 1994 were as follows:

(1) Mean intakes of most major food groups varied

little from season to season. When variability was measured in terms of an index (year average=100.0), these index values ranged as follows: grains from 96.8 in summer to 103.3 in fall; vegetables from 96.4 in winter to 103.0 in summer; fruits from 95.6 in fall to 103.2 in summer; milk and milk products from 93.5 in summer to 104.5 in fall; meat, poultry, fish from 95.3 in spring to 110.3 in fall; beverages from 94.4 in fall to 106.3 in spring.

(2) Seasonal variability was evident among fruits and vegetables. When mean intakes (grams per day) in the highest and lowest seasons were compared, significant differences (0.05 level) were found for citrus juices; melons and berries; other fruits and mixtures; fried potatoes; tomatoes; dark-green vegetables; deep-yellow vegetables; and corn, green peas, and lima beans.

(3) Intakes of other foods also varied by season. Statistically significant seasonal differences (0.05 level) were measured for cakes, cookies, pastries, pies; crackers, popcorn, and pretzels; milk desserts; cheese; pork; frankfurters and sausages; poultry; mixtures mainly meat, poultry, fish; candy; coffee; tea; fruit drinks and ades; and carbonated soft drinks.

Conclusions

The results of the study indicate that seasonal variation is an important consideration in analyzing food intake patterns of Americans and in conducting surveys used to estimate food consumption of the U.S. population. Food demand analysts need to be aware of the seasonal influence on intakes of foods. Further research using a multivariate approach to control for factors such as cultural and regional food habits and food prices is needed to explain these seasonal effects. Also, further research is needed to study the seasonal influence on nutrient intakes of consumers.

Endnote

1. Economist, Food Surveys Research Group, BHNRC, ARS, U.S. Department of Agriculture.