Estimating the Cost of Protein in Foods

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years. In addition, information on food item usage patterns in the 10 selected districts was obtained for October 1977 and October 1978.

USDA examined the effect of the cash-in-lieu option on local school food authority costs and on the types, amounts, and quality of food used. The impact on Federal and State administrative expenses in the two control districts was also analyzed.[1]

Findings indicated that school food costs under the cash option were slightly lower in most pilot projects after they were adjusted for cost changes due to inflation. In contrast, labor costs increased in five of the eight pilot districts. It is unclear, however, whether these increases may be attributed solely to the withdrawal of USDA commodities. Declining school enrollments and the limited duration of the study period may have caused higher short-term costs. In a study of this duration, labor costs may not reach full adjustment.

The effect of cash-in-lieu on State administrative expenses was assessed by comparing cost figures for Kansas, which phased out its commodity program in 1975, and Colorado, which continued to receive USDA food donations. State costs were generally higher in the State receiving commodities. If cash-in-lieu were adapted nationwide, the net savings in Federal expenditures are estimated at $2.3 to $3.55 million annually.

Changes in the types and amounts of food used in schools were examined to determine how schools would use the greater choice in menu items that cash provided. Pilot schools used more fish and less fresh fruits and vegetables.

The USDA results, which provide insights on the implications of the cash-in-lieu option in the context of a case study, may not be representative of costs in other areas or the Nation as a whole. Generalizations of report results may be misleading due to the small sample size and limited duration of the study. In addition, the law required prospective sites to apply in response to a Federal Register notice. The sample, therefore, may be subject to some self-selection bias. ■

[1] U.S. Department of Agriculture, Food and Nutrition Service, *A Study of Cash-in-Lieu of Commodities in School Food Service Programs,* December 1979.

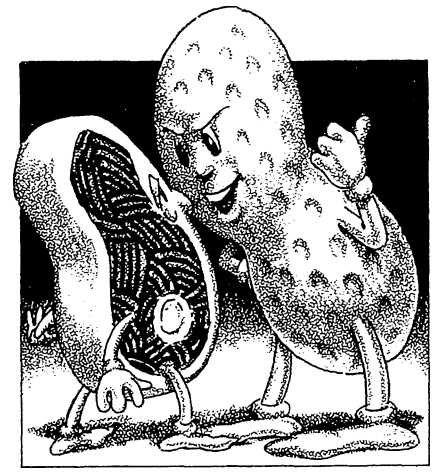
The cost of 20 grams of protein from specified foods was reported in the Summer 1979 issue of the *National Food Review.* The specified foods were described as sources of "complete protein," that is, "they contain all of the amino acids in significant amounts and in proportions fairly similar to those found in body proteins."

Nutritionists may disagree with this statement because the list of specified food included dry beans, white bread, and peanut butter. Although these are good sources of protein, they lack at least one of the amino acids essential for growth. In addition, while most of the foods on the list supply 20 grams of protein with serving sizes typical of actual diets, foods such as bacon, peanut butter, white bread, and dry beans require larger serving sizes to supply 20 grams of protein.

USDA's Science and Education Administration has estimated the cost of 20 grams of protein, and suggests that consumers can substitute some of the meats ordinarily used with alternatives such as eggs, dry beans, and peanut butter. High quality (or complete) protein in meat, milk, eggs, and cheese can be combined with the lower quality protein in cereal and grain products to reduce costs and insure adequate amounts of protein.

But nutritionists are concerned about the quality of proteins because unless the essential amino acids are supplied in the right proportions in a given meal, the body makes less tissue than is needed. Animal proteins are rated highest, but proteins from some legumes such as soybeans and chickpeas are almost as good as animal sources. Animal and vegetable proteins can be combined in dishes such as cereal with milk or macaroni and cheese. Vegetable proteins can also be combined to improve the quality of protein. Peanut butter sandwiches, beans with rice, beans with tortillas, and soybeans with sesame seeds are examples of mixtures or meal plans that enhance protein quality.

The average American diet is high in amounts of animal proteins and most amino acids. However, some vegetarian diets are so restricted that they provide inadequate amounts of amino acids. Those who choose to follow such a restricted diet



need more knowledge of food composition than those who choose a more typical diet.

Conversely, there is some concern that the average American diet may contain excessive and potentially unsafe levels of animal proteins and amino acids. Also of concern is the possible interaction among various proteins in foods which are fortified, thus producing unexpected effects. This research question is being explored.

Vegetables, grains, eggs, fruits, and nuts are important sources of nutrients other than protein. Nutritionists recommend that both vegetarian and traditional diets contain a variety of foods. They also suggest a variety of sources of protein and other nutrients at a meal, since such measures reduce the probability of nutritional excesses or deficiencies. ■

References

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