

Impact of NLEA on Food Composition Databases

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It's a pleasure to be here and to share information from a meat perspective on nutrition labeling initiatives. As I was preparing this talk, I realized that the topic was very much like the old question, which came first, the chicken or the egg? This is because the meat industry, the species of beef, pork, lamb and veal which I represent, were very proactive in obtaining current nutrient composition data before the enactment of NLEA in 1990.

In my presentation today, I'll be looking at nutrition labeling and meat nutrient data bases before and after NLEA. I'll describe the current status of meat labeling and future initiatives.

Nutrition labeling is not new to the meat industry. In 1985, the National Live Stock and Meat Board, the American Meat Institute and the Food Marketing Institute collaboratively created Meat Nutri-Facts; a point-of-purchase, nutrient labeling program designed to provide consumers with information in the retail/grocery store meat case. The data were presented for cooked and trimmed, three-ounce portions to demonstrate this nutritional profile of meats to the health-conscious consumer. All of the nutrient data for beef, pork, lamb and veal, the original Meat Nutri-Facts, were obtained from USDA's Handbook 8. The program was national and consisted of posters, brochures and rail cards to be placed in the meat department like those shown here.

At about the same time, the beef industry recognized that the amount of fat on beef cuts in the retail case was much less than the one-half inch fat trim level reflected in the Handbook 8 (1) data. For the many uses of Handbook data, (including national consumption studies and nutrient intakes) it became imperative to demonstrate a more realistic nutrient profile for beef. This prompted the beef industry to fund the Beef Market Basket Study, an analysis of beef products at the retail level, to document the reduced fat beef products that consumers were actually buying. In fact, the average fat trim level of all beef cuts was one-eighth inch and more than 40% of all beef cuts in the meat case had no external fat trim (2). In the total product mix, fresh beef cuts in the meat case had 27% less fat than the USDA data presented in Handbook 8. Working closely with USDA's Human Nutrition Information Service, the results from this study led to the revision of Handbook 8-13 in 1990 which included beef cuts with 0-inch and 1/4-inch external fat trim levels (3).

Current nutrient data were lacking for veal and lamb also, and these species also funded studies (4,5) during the late 1980s to obtain better, current data and update the information in Handbook 8. Handbook 8-17 (6) for lamb and veal was revised in 1989 to reflect these new data.

A Pork Market Basket Study (7) completed in the early '90s confirmed that producer changes in feeding practices and genetic pig selection as well as fat trimming of pork cuts produced a 31% fat reduction in fresh pork products. This study documented the fat trim level of individual pork cuts and found that the average fat trim level for fresh pork cuts was less than one-tenth inch. The information in Handbook 8-10 (8), revised in 1993, reflected current pork products that consumers would find in the grocery store.

So, before NLEA came into existence, the meat industry had spent more than one-half million dollars to obtain the nutrient content of fresh meat products available to consumers. This resulted in updated USDA nutrient databases to reflect current fresh meat cuts.

What has happened since NLEA?

As you all are well aware, meat products are indirectly affected by NLEA because they are regulated by USDA, not FDA. However, in an effort towards harmonization of labels for the consumer, many of USDA requirements are similar or identical to FDA regulations.

For both government organizations, there are two distinct labeling programs for the variety of foods available today: a voluntary program of requirements for raw, single ingredient foods (like a steak or carrots) and a mandatory program for processed, multi-ingredient products such as hot dogs. The challenge for the meat industry to meet the requirements of the voluntary and mandatory labeling programs was to make sure the nutrient data were current, available and usable by the consumer.

Voluntary Labeling

Since Meat Nutri-Facts already had been developed and was similar in format to the new requirements, a revised Nutri-Facts was presented as a model to use in meeting the voluntary labeling requirements. Nutrient information of 45 cuts of beef, pork, lamb, veal, and poultry products must be visible in the meat department. As in the original Meat Nutri-Facts, the data are provided on posters and brochures. I would like to point out that focus groups were conducted to determine the format most effective in providing the information.

Because of all the previous data gathered by the meat industry, you might think it would be a simple matter to revise Meat Nutri-Facts. However, there were several important issues that complicated the process. One issue of concern was presenting the nutrient data on meat cuts with all fat removed (separable lean only) or data that included both lean and fat. Obviously for some meat cuts, there could be a great difference in fat intake if the meat was totally trimmed of fat or not before eating. (Table 1)

In addition, several surveys, like this one from FMI (Table 2) (9) demonstrated that most consumers did trim meat fat. A Meat Board study to measure actual behavior found similar results. However, since all consumers do not trim all fat from meat before eating it, the nutrient information on Nutri-Facts required the nutrient data for meat cuts with separable lean and fat, as well as for poultry with skin. Yet, because the research clearly showed that many Americans do trim some fat from meats and there is a significant reduction in fat intake when all visible fat is removed from meat cuts, USDA allowed the option of including separable lean data (in addition to lean and fat data) in the Nutri-Facts program.

Table 1		Table 2
Impact of Trimming Fat from Meat 3 ounce small rib roast		FMI <i>Shopping For Health</i> , 1992
With Fat	23 g Fat	87% Trim Fat Before Consumption
Trimmed, Lean Only	9.8 g Fat	76% Trim Fat Before Cooking

With the requirement to report nutrient data including both lean and fat, a new question arose as to which fat trim level would provide appropriate information. Although the Beef Market Basket Study showed that the average fat trim on beef cuts was one-eighth inch, the revised Handbook 8-13 contained information on zero and one-quarter inch external fat trim. The Pork Market Basket Study methodology was different from the Beef Market Basket Study and the revised pork data reflects the actual fat trim level of individual fresh pork cuts (on average, less than one-tenth inch). The Handbook data on veal also reflected actual fat trim level, especially because there is very little external fat on fresh veal cuts. It was concluded that one-eighth inch fat trim level was the industry standard for fresh meat cuts currently available in the grocery store, and data reflecting this level would be appropriate for use in Nutri-Facts.

As progressive as the beef industry was to get up-to-date nutrient composition prior to NLEA, it missed the mark on fat trim level. All previous beef composition data had been collected and analyzed by Texas A&M University, so it was possible to use the data from these previous studies to calculate the nutrient composition of one-eighth inch fat level beef cuts (10) for in use the revised Nutri-Facts. Likewise for beef, one-eighth inch fat trim for lamb nutrient content also were calculated from previously collected data. Again by working closely with USDA, accurate data were generated and updated in USDA's nutrient database for beef and lamb.

The success of the original Meat Nutri-Facts program is evident in that the program has expanded to include poultry, fish and seafood, and fresh fruits and vegetables. This was one way to assist the grocer in making available to the consumer uniform nutrition information in various sections of the grocery store. The current Nutri-Facts program has several partners in addition to the original three including National Grocers Association, National American Wholesale Grocers' Association, and the American Dietetic Association and others.

Implementation of the revised Nutri-Facts program will be tested when USDA's audit which was scheduled to begin on June 12, 1995, is completed and evaluated. Successful implementation will keep this voluntary program from becoming a mandatory one.

Mandatory Labeling

On-package nutrition information is required for processed meat products just like that found on a can of beans. Because of the very high costs associated with lab analyses of every product, there was great incentive by the meat industry to find a way to utilize database information for the mandatory labeling requirements like that used for the voluntary requirements. Many new products (often with reduced fat) are entering the market place and must have accurate nutritional information. The use of databases for mandatory labeling offered these benefits: 1) significant cost savings, 2) reduced turn-around time and 3) an accelerated timetable to launch new products.

In 1992, the National Live Stock and Meat Board hosted a round-table discussion with participants from government, academia, meat industry and software suppliers to determine an efficient model for database use for processed meat products. The discussion centered on recipe calculations using data from lean and fat trimmings such that the nutrient database for the individual ingredients would be used to determine the nutrient profile of the multi-ingredient product. Following the round-table meeting, USDA published the *FSIS Manual on use of Databases for Nutrition Labeling* (11). This document establishes the standards on how to use

existing databases, such that for virtually any new or existing meat product, an accurate nutrient profile could be generated by using the USDA database.

For both voluntary and mandatory labeling requirements of meat spawned from the enactment of NLEA, the meat industry has enjoyed a constructive working relationship with USDA to provide current nutrient information to the consumer.

What is the future of meat nutrient labeling?

Nutrient databases must continue to be updated to reflect the current food supply. New data already collected but not yet available include ground beef data with fat contents ranging from 30% to 5%; additional beef cuts such as skirt steak (commonly used in fajitas), tri-tip steak, and pork arm and picnic data. A study to determine the nutrient content of two new veal cuts, the shank, used in osso bucco, a popular Italian dish, and the veal breast is ongoing as I speak. It will be a challenge to maintain a nutrient database of new reduced fat meat products, but equally important as these products rapidly are coming into the market place.

In summary, the meat industry took a proactive stance to obtain nutrient composition that reflected what consumers were buying before NLEA was initiated.

With a constructive working relationship with USDA, it has been possible to update the National Nutrient Databank with current fresh meat product information. The advent of NLEA and USDA labeling initiatives have fostered continuous enhancement of databases to reflect a changing food supply.

Accessibility of the information also is critical to success of the voluntary and mandatory programs. With the renewed use of Nutri-Facts for voluntary labeling, and allowance of database calculations for mandatory requirements, the nutrient content of most meat products is available to the consumer.

The question still exists on which came first, the chicken or the egg, but database coordination among producers of food, processors, software suppliers and government is more important than ever before.

References

- 1 United States Department of Agriculture, Human Nutrition Information Service. Agriculture Handbook 8-13. Composition of Foods: Beef Products; Raw, Processed, Prepared. 1986.
- 2 Savell, J.W.; Cross, H.R.; Hale, D.S.; Beasley, L. National Beef Market Basket Survey. Final Report to National Cattleman's Foundation. Denver. Texas A & M University. 1988.
- 3 United States Department of Agriculture, Human Nutrition Information Service. Agriculture Handbook 8-13. Composition of Foods: Beef Products; Raw, Processed, Prepared. Revised May, 1990.
- 4 Ono, K.; Berry, B.W.; Johnson, H.K.; Russek, E.; Parker, C. F.; Cahill, V.R.; Althouse, P.G. Nutrient Composition of Lamb of Two Age Groups. *J. Food Sci.* 49:1233-1257. 1984.
- 5 Ono, K.; Berry, B.W.; Douglas, L.W. Nutrient Composition of Some Fresh and Cooked Retail Cuts of Veal. *J. Food Sci.* 51:1352-1357. 1986.

6United States Department of Agriculture, Human Nutrition Information Service. Agriculture Handbook 8-17. Composition of Foods: Lamb, Veal and Game Products; Raw, Processed, Prepared. Revised April 1989.

7Buege, D.R.; Held, J.E.; Smith, C.A.; Sather, L.K.; Klatt, L.V. A Nationwide Survey of the Composition and Marketing of Pork Products at Retail. R3509. Department of Agricultural Journalism, University of Wisconsin-Madison, 1990.

8United States Department of Agriculture, Human Nutrition Information Service. Agriculture Handbook 8-10. Composition of Foods: Pork Products; Raw, Processed, Prepared. Revised December 1992.

9Food Manufacturers Institute. Shopping For Health Study. FMI, Washington, D.C. 1992.

10Savell, J.W. Nutrient Data for Beef and Lamb at one-eighth inch External Trim Level. Final Report to the National Live Stock and Meat Board. 1994.

11United States Department of Agriculture, Food Safety and Inspection Service. FSIS Manual on Use of Databases for Nutrition Labeling. FSIS Guidelines for the Effective Use of Data Bases to Develop Nutrient Declarations for Nutrition Labeling of Meat And Poultry Products. Washington, D.C. February 1993.