

How New Food Trends Are Affecting Industry Use of Databases

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Thank you for the opportunity to address the 19th National Nutrient Databank Conference. I have been attending and enjoying these conferences for many years, and I want to express my appreciation to the organizers for this opportunity. I cannot substitute for Chor San. Those of you who know her realize that her knowledge and insights are far-reaching and unique. So bear with me while I try to do just that.

I have organized my brief comments as follows. First I will list what we see as being the major trends in the food industry, all of which have direct implications for database developers. Then I will discuss the consequences of the trends on our work environment, propose approaches which will provide solutions, and come to some conclusions.

The first major trend affecting industry use of databases is a trend toward healthier eating. Consumers are becoming more aware of what to look for on a label and this awareness is expected to continue to increase with the educational component of NLEA. Along with that comes the requirement on the industry to develop healthier foods. They want calorie-, fat- saturated fat-, cholesterol- and sodium-controlled products. They want products which provide the beneficial components they are hearing about in the media (such as antioxidant nutrients, folic acid, minerals and fiber). And they continue to want products low in sugar. We in the food industry must respond appropriately to consumer demand.

A second major trend is a supermarket shelf space war going on, the result of fierce competition for a limited amount of space in the stores. The product development time line, meanwhile, has been shrinking. What used to take 18 months has been reduced to 8 to 12 months time. In order to introduce a new product line, shelf space requirements demand at least 12 varieties be introduced. And these products must be an accurate result of the product development process. We can't afford to make mistakes. The resulting constraints are prohibitive, both from a time and cost perspective. And all the while we must work in an environment where R & D budgets are shrinking. The Food Industry generally spends 0.5 to 0.8% of its total sales dollars on R & D compared with about 11% for the Pharmaceutical Industry. So we need to work very efficiently, economically, and predictably.

Finally, the mandatory nutrition labeling which came into effect two weeks ago with NLEA is a third major trend with a direct effect on industry use of databases.

Just to give you an idea of how varied our uses of databases are, I have listed here the types of demands placed on our nutrient database (see Figure 1). The database is an essential resource in our Nutrition Science group. And at various times it has had to serve all these different purposes. The

difficulties in maintaining a database that must serve all these purposes is enormous. Some may say that we are asking too much of our nutrient database. But nonetheless, these are the functions it fulfills.

We need to build nutrient databases sufficiently accurate for labeling so that we can shorten the time to label. A complete laboratory analysis of all NLEA nutrients can take as much as 4 to 6 weeks. We must reduce the turnaround time from initial concept to label. Nutrient Database for Standard Reference (Handbook 8) updates are not frequent or ingredient specific enough to meet new product and product reformulation needs. Our shrinking R & D budget requires cost effectiveness to become a top priority in all our work. Many new products have short life spans. Our goal is to contribute toward the development of products which accurately fill the needs they were intended for.

We need databases accurate enough to meet regulatory compliance requirements. To date, we have not encountered such an "intelligent" database. Our database should take into account the effect of processing on nutrient composition. We need better ingredient data. For some ingredients, these must be company specific: for example, our unique spice mixes and flavors. For other ingredients, we need more generic USDA ingredient-based data. Such a database will accurately predict label values during the development phase and ultimately can be used to label products. For dietary assessment, menu planning, therapeutic dietary guidance and recipe development, we need more brand-specific data in Handbook 8. The current soup values in Handbook 8-6, for example, are Campbell products from 1980, and thus do not reflect many products currently in the marketplace. Industry has an obvious role to play in improving brand-specific data.

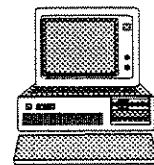
On the subject of industry-supplied data to Handbook 8, what is a reasonable request of industry? In this era of reduced R & D budgets, we must weigh carefully how we are going to spend our scarce resources. With reference to the quality assurance measures that the October 1993 GAO report considered essential for determining the scientific validity of food composition data, we need to be willing to supply information on the selection and treatment of samples as well as the number of samples to assure confidence in our data. Some agreement must be reached between the data suppliers (food industry) and data distributors (USDA) on the frequency with which requests can be processed. Imputation of missing nutrients (non-label nutrients) is a complex issue, involving protection of company interests, time constraints and legal issues. These issues must be addressed.

We in the food industry need to know how the data we supply will be made available to the public. Will it be updated as received, on a yearly basis, or by some other schedule? We need to be told how the data will be handled; that is, will product data be averaged with other suppliers of similar products, or will data be presented by brand? And finally, we need assurances that trademarks will be respected.

The result of careful and precise database development will benefit consumers as well as government agencies and industry by assuring the accuracy of the information on the product label. Better data will be available for software developers. And more accurate information on branded products will be included in USDA databases at low cost to the public. We look forward to working together with all of these groups to continue to improve the quality of nutrient databases.

Food Industry Nutrient Databases are Used for Many Purposes

- ✓ Product Development
- ✓ Menu Planning
- ✓ Recipe Development
- ✓ Dietary Assessment
- ✓ Therapeutic Diets
- ✓ Clinical Studies
- ✓ Advertising Substantiation
- ✓ Competitor Comparisons
- ✓ Eating Pattern Analysis
- ✓ Research



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Trends in Foods

Healthier Eating ==> Healthier Foods
Supermarket Shelf Space War ==> Fierce Competition
Mandatory Labeling (NLEA)



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Consequences of Trends on Food/Nutrition Databases

Build Nutrient Databases Sufficiently Accurate for Labeling

Shorten Time to Label

Reduce Turnaround Time

USDA Handbook 8 Updates not Frequent Enough to Meet New Product / Product Reformulation Needs

Cost Effectiveness

Shrinking R & D Budget

Short Turnaround Time for Product Development
Accuracy



Solutions

Develop Better "Intelligent" Databases to Calculate Nutrient Values for Products

Must Know Effect of Processing on Nutrient Composition

Better Ingredient Data

Company Specific

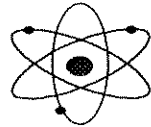
More Generic Ingredient Data

Goal is to Use Databases:

During Development To Predict Label Values

Ultimately To Use for Labels

More Brand Specific Data in Handbook 8



Solutions

Shorten Time Line - Industry-Supplied Data

What is a Reasonable Request ?

Number of Samples

Laboratory Methods/Standards

Frequency of Requests

Imputation of Missing Nutrients

Schedule for Inclusion

Knowledge of Data Handling Techniques

Assurances that Trademarks will be Respected



Conclusions

Benefit for Consumers, Government Agencies, Industry
Accurate Information on Final Product

Better Data for Software Developers

Accurate Data on Branded Products

USDA Access to Nutrient Data at Low Cost
More Data Available for Handbook 8

