

DUE DILIGENCE WITH DATABASE NUTRITION ANALYSIS

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Food labelers are frequently faced with incomplete data from ingredient suppliers. Despite this lack of data, labelers are obligated to report accurate nutrient values in the Nutrition Facts for the product. The same is true for nutrient values that will be used for nutrition labeling in restaurant/ready-to-eat foods.

Labelers can meet the goal of accuracy in labeling by due diligence. Due diligence is a term used to refer to the process of performing all necessary steps to arrive at an accurate conclusion; due diligence includes thorough recordkeeping to document how the conclusion was derived. For food labelers, due diligence is a thorough performance of obligatory nutrition analysis tasks; the performance utilizes a deep knowledge of food composition and professional wisdom. This enables labelers to find or reasonably deduce answers when facts aren't readily available.

Due diligence begins by creating a database of nutrient values for raw materials from which the Nutrition Facts will be derived:

Establish the list of ingredients used in the products or menu items to be analyzed.

Determine the nutrients to be tracked. Keep these in mind while working through the steps.

Have at hand a research quality database with USDA data. USDA data is based on multiple sample testing; reported values are statistical averages, unrounded, and for 100-gram portions. Food Consulting Company uses Genesis R&D SQL by ESHA Research.

Evaluate supplier specification sheets for usability or need for further information.

Ideally the specifications will show:

- unrounded data (usually reported as "per 100 grams")
- complete data for all nutrients that will be tracked
- data for moisture & ash
- proximates (protein, carbohydrate, fat, moisture, ash) that add up to 100% of the reported weight of the ingredient
- calories that make sense in context of the 4-4-9 formula, Atwater factors, or another FDA allowed method for calorie calculation
- fat components (sat, trans, mono, poly) that make sense in context of total fat
- carbohydrate components (fiber, sugar) that make sense in context of total carbohydrate
- the source of the data

Determine best data matches for each ingredient.

- For certain ingredients and menu items, USDA data will be the best source; examples are fresh produce, foods with a standard of identity, unprocessed raw meats, natural cheese, butter, sour cream, etc.
- Use supplier spec sheet data for manufactured items/ingredients that are in ready-to-use form (such as sandwich spread, cheese sauce blend, cinnamon roll icing). If necessary, find a way to derive reasonable values for missing spec sheet data. There is no single way to get a value that is not reported. Sometimes values can be mathematically deduced from trustworthy values already available. In some cases, it may be necessary to go back to the supplier. In other cases it may be necessary to supplement with laboratory analysis.

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Enter usable spec sheet data into the raw materials database as a new food item.

Now the food labeler is ready to do the analysis:

Produce data per serving and per 100 grams of product. One hundred gram (100g) data is standard for nutrient analysis and allows for quick quality assurance checks and nutrient comparison of foods.

If the data resources were good, the end nutrient values will be accurate. However, some foods will undergo further processing that will change the values.

Adjust for processing. For example:

- All cooking methods (baking, frying, simmering, etc.) alter the moisture content of food. Consider a cake where the batter weight is 41 ounces and the baked weight is 36 ounces. The difference is the loss of five ounces of moisture (water). The baked cake has more nutrients per 100 grams than did the batter.
- Deep fat frying alters moisture and nutrient content but not weight. This is because as fat is absorbed, moisture is lost. Example: 100g starting weight, plus 10g fat pick-up, minus 10g moisture loss = 100g end weight. The absorbed fat contributes calories and fatty acids that need to be reported.
- In breading and marinating, the food to be eaten does not take up all of the breading and marinating mixture per recipe. The part left behind should not be included in the final calculated nutrition data.

Apply the nutrient values for the batch formulation to the serving size that will be reported.

Review the final values to confirm that they make sense.

- Do proximates add up to 100% of the 100g and per serving weight?
- Do fat and carbohydrate components make sense in context of their total weights?
- Do calories make sense based on 4-4-9 calculations (or another FDA allowed method)?
- Do the values make sense based on knowledge of the food's composition?

In all cases the Nutrition Facts should reflect what is present in the food package.

Due diligence through each step of the process leads to accurate Nutrition Facts and provides corresponding records that will stand up to public scrutiny.

This article is adapted from an article published in DBC Dimensions based on an interview with Karen C. Duester, MS, RD, president of Food Consulting Company. Food Consulting Company is the largest outsource provider assisting food companies in meeting FDA labeling requirements. The company offers a full range of food labeling services and can be reached at www.foodlabels.com or by calling 800-793-2844.

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