

# Criteria Of Quality And Sources Of Variability

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As a continuation of basic discussion of nutrient composition, there needs to be an understanding of the basis of quality and variability of the nutrient values in a database. There is no single measure of database quality. The quality of a database must be defined based on the uses for which it is intended. The most obvious factors include the number of foods in the database, the number and types of nutrients included, the amount of missing data, the sources of the data and the quality of the data from each source. There are less obvious considerations that include the description of the food, the data from manufacturers, the inclusion of label data, modifications of products, the amount of imputed or calculated data and the validity of those calculations.

The term accuracy has very little meaning when applied to a nutrient database since the individual nutrient value for a single food item may differ from another sample of apparently the same food. There are many sources of variation for the individual values. The size of the variance and whether it is a normal distribution is important to know. Differences relating to methodology, inter- and intra-laboratory differences, sampling and sample variation due to differences in biological origins, growing conditions, storage conditions are largely uncontrollable factors, but tend to increase the variance of the values. How well the individual values are documented pertaining to source of the data, conditions under which it was obtained and the degree to which values are aggregated occurred, has great effect on the values listed in a database.