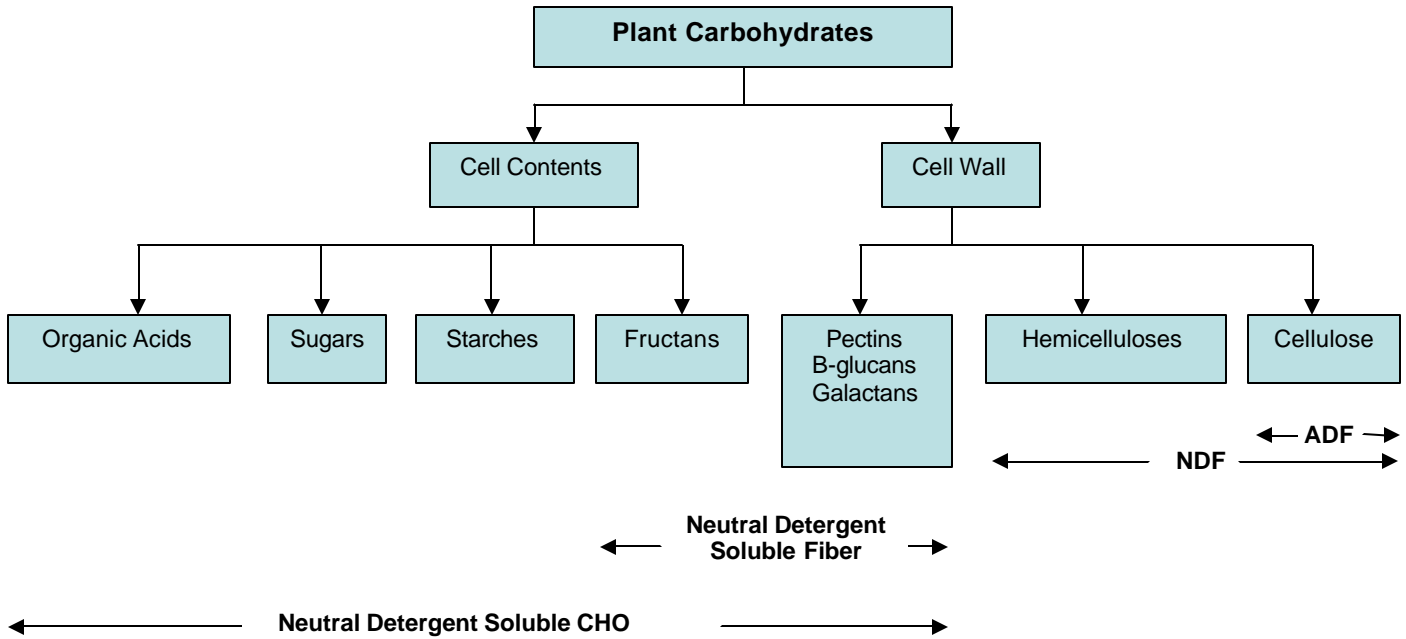




Starch & Sugar

Carbohydrates (CHO) are the major source of energy for rumen microorganisms and is also the single and largest component (60-70%) of a dairy cow's diet. They represent the major component of net energy for support of maintenance and milk production. The following is an illustration of structural and nonstructural carbohydrates of plants.



Balancing these 2 groups of carbohydrates poses a challenge in dairy cattle rations. Variations in concentration can occur based on maturity of the plant, weather conditions and the number of heating degree-days. Balancing and managing carbohydrate (CHO) nutrition is to minimize deviations of ruminal pH throughout the day. Proper rumen pH ensures conditions are good for healthy microbial activity. Microbes convert the starch and sugars into volatile fatty acids, primarily propionic acid, which is absorbed across the rumen wall. Once across the rumen wall these VFA's are used for energy or for glucose production by the cow. Low NDF/high NFC rations lower rumen pH by decreasing rumen motility, which reduces the rate of Volatile Fatty Acid absorption. High NDF/low NFC rations occur where feeding overly mature forages, especially grasses, and /or total mixed rations containing excessively long particle size.

In summary, feeding quality forage and feed is of the utmost importance. One cannot predict its quality. However, by tests provided from a forage laboratory, balancing for a daily ration will match the producer's ability to maximize production.