

New NIR calibrations for Total Fatty Acid and Sugar.

With Dairyland Laboratories ongoing commitment to provide you with true value in forage testing services, we are adding a new NIR calibration for Total Fatty Acid. We are also replacing our NIR sugar calibration with a new calibration based on improved methodology for measuring sugar.

Total Fatty Acids. – The traditional ether extract (EE) method for determining fat content of feedstuffs dates back to 1860 and has many known flaws. Primarily, it is not a nutritionally uniform measurement and includes fatty acids as well as other components that dissolve in ether. These include glycerol, chloroplasts, waxes, urea, hexoses, alkanes and fat soluble vitamins. It is estimated that up to 50% of the forage and 20% of grain EE may be nonfatty acid in nature (Palmquist 1980).

Since fat is a primary factor in determining the energy values of feeds and forages, replacing fat (EE) with Total Fatty Acid (TFA) provides you with a more true determination of the fat content and consequently more accurate energy values. Furthermore, since Fatty Acid is a nutritionally uniform measurement, the NIR calibration is superior to Fat (EE). The standard error of Dairyland Laboratories Total Fatty Acid NIR calibration for Hays and Haylages is approximately 35% less than NIR calibration for Fat (EE).

The Total Fatty Acid(TFA) analysis will start showing up on your Hay, Haylage, Corn Silage, Dry and Wet Distillers grains reports during the month of July. It is included in our NIR Select, NIR NDF Digestibility and NIR complete packages at ***no additional charge***. Fat (EE) will continue to be on the reports.

Sugars. Over the years researchers and laboratories have realized that measuring simple sugars is not quite so simple. We have continued to improve upon this analysis and as a result have a much improved NIR calibration for Ethanol Soluble Carbohydrates. For some products, such as Fermented Haylages and Corn Silages you will find the new values to be somewhat lower than the old NIR values. It is our opinion these are more accurate and nutritionally relevant for today's lactating dairy cows. **The new sugar values will be noted on the report as Sugar (ESC) and will replace the old values.** This will take place in July as well.

Researchers such as Mary Beth Hall and others in collaboration with AAFCO and AOAC continue to improve upon the methodology and definition of sugars in feeds and forages. While presently there is no official procedure for sugars in forages, there has been significant progress with more definitive methods coming in the near future.