Ag Health News
LABORATORIES

Now Offering NIR Feed Analysis

What is NIR Feed Analysis?

NIR stands for Near Infrared Spectroscopy. It is an analytical tool used for chemical or nutrient analysis based on the interaction of physical matter with light in the near infrared spectral region (700-2500 nm). A feed sample is scanned with a NIR light beam and a mathematical relationship is established between the NIR spectra that is generated and wet chemistry nutrient values.

NIR prediction equation development requires a huge volume of wet chemistry data on a feedstuff. It would be virtually impossible for a small feed lab, to do NIR equation development. Therefore, Ag Health Labs needed to find a source for NIR equations. Ag Health Labs chose to purchase the NIR prediction equations from Cumberland Valley Analytical Services (CVAS).

Why use CVAS Equations?

We have worked with CVAS for several years for ancillary feed analysis testing we are not able to provide within Ag Health Labs. We selected CVAS primarily for the visionary leadership of their owner, Ralph Ward, and their constant pursuit for the best testing methods available to provide nutritionists, dairymen, and growers with the data they need to properly assess feed quality, balance rations, and achieve optimal performance from their cows.

When we began investigating NIR analysis we again reviewed the test packages and prediction equations of all the leading feed laboratories in the nation. No lab was investing as much effort and resources into developing the most accurate equations for the most valuable nutrients we want to assess both now and in the future, than CVAS. We also have the ability to share data and work cooperatively with the premier lab in the nation for dairy feed analysis. **We look forward to providing valuable data summaries and educational interpretations of how we are growing feed in the Northwest and how we best utilize the data to maximize performance of our cattle and profitability of our clients.**

Is NIR as Accurate as Wet Chemistry?

Near Infrared Technology has come a long way from its early days when accuracy was a major problem. Now NIR prediction equations are based on huge data bases with NIR to Wet Chemistry data comparisons. There have also been improvements in the prediction equations themselves adding to the improved accuracy of NIR.

NIR technology will never yield the accuracy on a single sample which Wet Chemistry analysis will, so if you only have one sample to test, Wet Chemistry may be your best option.

Why use NIR Feed Analysis?

The downside to a single feed sample is you have a large range of variation just in the sample selection and if it's not done as randomly and correctly as possible, that one sample may be a bad representation of the entire stack or bunker. If you have the ability to repeatedly sample a stack or silage bunker you will increase the predictability that you truly know what the nutrient profile of the stack is. With repeated sampling of a pile of feed, the predictability of NIR analysis can overcome the accuracy of one wet chemistry analysis. Repeated NIR analysis may also better indicate when there is a change occurring in a pile or bag of feed than a periodic Wet Chemistry analysis.

So why don't we just run repeated Wet Chemistry analyses?

The time and materials involved in a Wet Chemistry analysis cause the cost to be around double the cost of NIR analysis. NIR proximate analysis also provides us with more information for that cost, such as sugars, starch, and fat. With the NIR Plus Option we can predict additional feed values such as NDF digestibilities, RFQ, fatty acids, and starch availability.