**Analyzing Reduced Lignin Varieties via NIR**

DAIRYLAND
Laboratories, Inc.

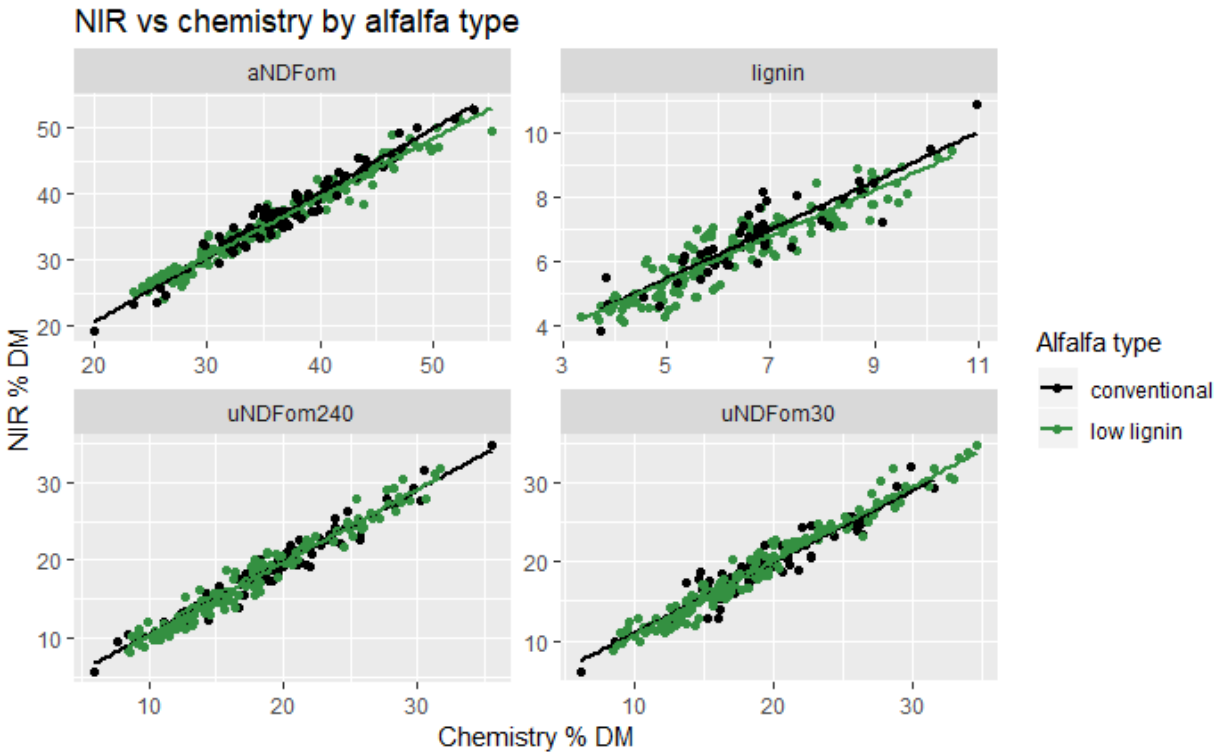
Authors: Kyle Taysom, Business Development Manager
Phillip Goldblatt, NIR Programs Manager

With the new alfalfa crop quickly approaching and more customers trying a reduced lignin variety for the first time, we thought it would be helpful to address the most common questions we receive.

*Disclaimer – As a commercial lab, it's uncommon for a sample to arrive to us labeled as "alfalfa", let alone "reduced lignin" or a specific brand name. We are not in a position to make any comparisons between specific varieties in the market today.*

**Can Dairyland analyze reduced lignin alfalfa by NIR?**

Yes, Dairyland's NIR calibrations are just as accurate for reduced lignin alfalfa as they are for conventional alfalfa. Through several research trials and routine sample analysis, we've accumulated chemistry results from a wide geographic area and multiple growing seasons for reduced lignin alfalfa. This reference chemistry has allowed us to build and validate calibrations for traditional fiber analyses as well as each of the fiber digestibility time points, we provide:



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**Which parameters should I look at on my report to figure out if my reduced lignin variety "worked"?**

In short, unless you are performing a research grade trial, trying to find differences in individual lab reports is probably futile. The reduced lignin alfalfa being marketed today claims up to 18% reduction in lignin. In other words, under the best circumstances you'd expect to see a 1 unit difference in lignin %DM between a conventional and reduced lignin variety.

For perspective, the standard error of lignin chemistry on alfalfa is around 0.7 units. In other words, noise in a chemistry analysis of lignin is just as large as the differences you'd expect to see between 1 conventional sample and 1 low lignin sample. Add to that any variation due to different maturities, soil types, soil moisture, insect or disease pressure, cutting, or harvesting conditions differences, and it's not realistic to expect to find meaningful differences in individual samples.

**Which package should I order to analyze reduced lignin alfalfa?**

Dairyland's NIR NDFD package contains all the nutrients typically used to define quality in alfalfa including CP, aNDFom, lignin, uNDFom/NDFDom 30 and 240, and the traditional quality indexes RFV, RFQ, TDN, and milk per ton. This package is available through all Dairyland locations and affiliated laboratories.