RELATIVE FORAGE QUALITY (RFQ) UPDATE

Introduced in the early 2000's, Relative Forage Quality (RFQ) is a value used to score haycrop forages. Similar to Relative Feed Value (RFV), RFQ uses nutritional components and predicted performance values to serve as an indicator of overall forage quality. While RFV is based solely on ADF and aNDF values, the RFQ prediction includes CP, ADF, aNDF, fat, ash and NDF digestibility (NDFD48). Fiber digestibility is a critical component of how well the forage will be used by the animal. By incorporating fiber digestibility along with additional forage components, the RFQ scoring system enhances the ability to evaluate forages.

The RFQ prediction scheme also incorporates a variable lab fiber digestibility average to adjust for differences among labs concerning the analysis of fiber digestibility. This normalizes the prediction and allows for better comparison of RFQ between labs. We've recently reviewed, calculated, and updated our lab average for 48 hr NDF digestibility and placed the updated value into the prediction equation.

The net effect of this update is outlined in the table below. The impact of the update will be observed primarily in alfalfa and alfalfa/grass mixtures with improved scores.

Sample	CP%	ADF%	aNDF%	Fat%	Ash%	NDICP%	NDFD48hr%	RFV	RFQo	RFQn
Alfalfa 1	22.1	31.6	40.6	2.3	12.0	4.6	60	147	164	172
Alfalfa 2	23.6	30.9	40.4	2.1	12.9	4.9	51	149	141	151
Alfalfa 3	21.3	31.1	40.9	2.6	11.6	4.5	42	147	124	132

Where,
RFQo = RFQ predicted with former lab average
RFQn = RFQ predicted with updated lab average

On average there was an improvement in RFQ of 8 – 10 points.

This example also illustrates the advantage of RFQ versus RFV. Using only RFV, one would rank these three alfalfa samples as no difference in quality. This is because the fibers values are all very similar. However, accounting for fiber digestibility in RFQ yields a different quality story. With all components similar except for fiber digestibility, as the fiber digestibility increases, the predicted RFQ increases, with Alfalfa 1 therefore having the highest value.

For more information on the RFQ prediction scheme, we suggest Dr. Dan Undersander's (University of Wisconsin) **article on Relative Forage Equality.**

Note on ash-free fiber or fiber reported on an organic matter basis (i.e. aNDFom) and RFQ and RFV:
Both the RFV and RFQ systems were developed with the fiber input including ash, i.e., aNDF not aNDFom. Incorporating fiber on an organic matter basis (aNDFom) will yield artificially higher predicted Dry Matter Intakes (DMI) with a net result of biased high RFV and RFQ values. Until research is performed to investigate, account for, and adjust these predictive schemes, ash free fibers values should not be used in the prediction of RFV and RFQ.