



FORAGE LAB AUSTRALIA

Powered by Cumberland Valley Analytical Services USA

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IN VITRO FIBRE DIGESTIBILITY

In vitro fibre digestibility of a feed provides us with a more informed understanding of the behaviour of that feed in a ruminal sense. It is not about total tract digestibility, but a reliable guide to ruminal outcomes. The biggest area of note from this assay is the Fibre digestibility outcomes.

The Invitro assay is determined by incubating a ground feed sample with rumen fluid in a beaker for varying time points. Time points may include 6, 12, 24, 30, 48 or (iNDF at 240 hrs). All points are run 3x on different days for high accuracy to ensure no outside influences from daily collected rumen fluid. This process provides information on how rapidly the feed can be digested and used by the animal, or if it will pass through unutilised.

APPLICATION

Neutral Detergent Fibre (NDF) is an estimate of TOTAL FIBRE. NDF consists of both digestible and indigestible fibre fractions. IE it captures good and bad fibre as it were. Ranging (in poor to more digestible fractions) from lignin, cellulose, hemicellulose and some pectins.

NDF digestibility (NDF-D) is a significant factor of feed quality. NDF can range from under 30 to over 80 percent of the forage dry matter content, so it is a major variable on how well that forage crop will perform in a ruminant ration.

Cumberland Valley Analytical Services USA is leading the way with over 12 invitro baths at our disposal offering hundreds of simultaneous sample capacity. The outcomes of this in vitro process give us a huge leap forward in measuring and benchmarking the relative NDF digestibility (expressed as percentage NDF) of all forage crops for ruminants.

Book values can be a poor indication of nutritional value due to differences in base products between countries, processing and varieties. This is especially so for any forage, and also common in a range of novel coproduct feeds that have unusual fibre fractions.

In vitro fibre digestibility provides the ability to test forages and opportunistic feeds and identify how well the animal will be able to digest the feed and how greatly that will impact total dry matter intake and rate of break down ruminally.

In an overall diet context, the work of Mike Allen suggests that for each 1 unit increase we see in NDF-D, we will see a 0.17kg increase in dry matter intake, and 0.25% increase in 4% Fat corrected milk.

SAMPLING PROCEDURE

Getting the sampling process correct is key to getting quality information back. The samples should be representative of the entire material sampled such leaf, stem and weeds present in forages.

1. Collect approx. 5 samples (grain, forage, by-product) in a clean bucket, representative of the total feed
2. Mix samples thoroughly
3. Remove a 250g sample from the bucket and place in a Ziploc bag (for wet products, double bag and don't fill to capacity).
4. Post samples with submission form via express post on a Monday or Tuesday to ensure it arrives within the week.
5. If posting dry feeds (hay, grain, cottonseed) express post is not essential but recommended.