



Application Note AN N304

FT-NIR Spectroscopy for Wet Forage Analysis

The fast analysis of fresh wet forage gains importance for faster screening of the increasing number of samples during harvest. FT-NIR spectroscopy as a rapid and cost effective method, allows determination of multiple nutrients and characteristics of wet and dry forages. The Bruker MPA II with the new large rotating sample cup IN313-S (370 mm diameter) allows easy analysis without sample preparation. The measured sample area is 100 times the area of a static sample and thus enables the analysis of such inhomogeneous samples efficiently and with only one filling.

Alternatively a TANGO or MPA II instrument with a standard 97mm cup can be used with multiple fillings per sample.

Why scan fresh forage samples?

- Minimal sample preparation
- Faster turnaround time
- More meaningful sample results
- Measure volatile components that aren't driven off in the drying procedure (e.g. ammonia, volatile fatty acids)
- Less chemical changes to sample e.g. Maillard Reaction between protein and sugars

The INGOT calibration packages from Aunir covers various types of forages:

- wet fresh forages and silages
- ensiled grass, silages and maize
- dry roughages (hay, straw)

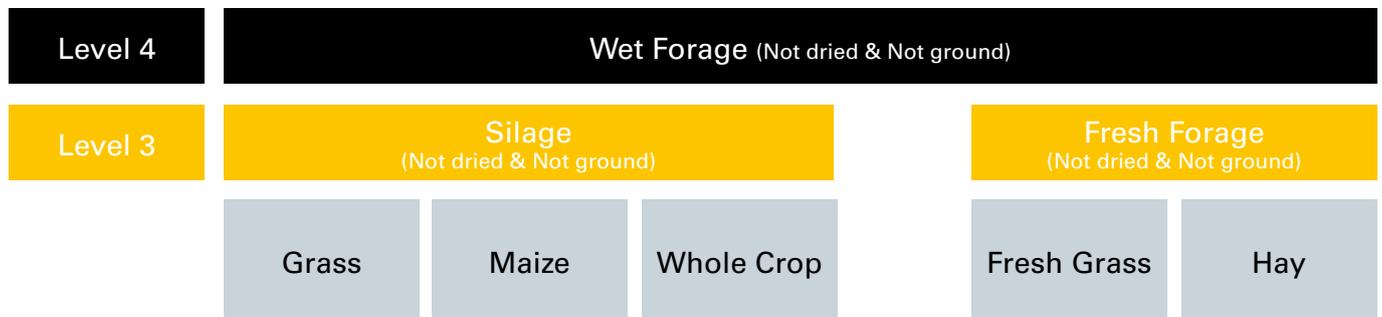
and provides a comprehensive range of parameters:

Dry matter	Oil
D value (organic matter digestibility)	pH
Protein	Lactic acid
Sugar	Volatile fatty acids
Ash	Ammonia
NDF	Starch
ADF	NCGD

Why choose the Aunir INGOT wet forage calibration package?

- Aunir is the leading independent developer and supplier of NIR calibrations, providing support services to ensure that all calibrations maintain optimum performance.
- INGOT calibrations are built on ISO17025 accredited reference data.
- All data originate from one reference laboratory,
- The INGOT database incorporates many years of seasonal, regional and varietal variation.

Hierarchy of INGOT calibration packages for wet forage



FT-NIR Spectrometers: Bruker Optics offers various FT-NIR spectrometer models for lab, at-line and on-line applications:



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