

# Faecal NIR For Cattle



*Measuring pasture quality from manure*







## *NATA Accredited for Chemistry, Microbiological and Residue Testing*

The quality of the diet consumed by cattle is one of the main determinants of productivity (reproductive performance, growth rate and carcass quality) but conventional methods of estimating the diet quality of grazing cattle are costly, time consuming and generally unreliable.

The ability to make inexpensive and reliable estimates of this trait can not only drive productivity, but also allow producers to acquire critical information for efficient production systems and enhanced economic viability. This is especially valuable when making decisions in relation to strategic and cost-effective supplementation.

New technology based on the analysis of cattle faeces using Near Infrared Reflectance (NIR) is breaking fertile ground in the quick, inexpensive and reliable prediction of diet quality of grazing cattle. Cattle producers spend millions of dollars each year on supplements (either molasses based liquids / blocks or mineral based loose licks) that are given to cattle to try and correct deficiencies in the soil or diet.

The major nutrients limiting growth and performance in cattle are:

- Energy - primarily from pasture/browse
- Protein - if low in pasture/browse, has to be sourced from urea
- Phosphorus - Australian soils are notoriously phosphorus deficient, so this is a common deficiency

In some cases there may appear to be plenty of grass available but the cattle is still not gaining weight – this may be due to low digestibility of the grass i.e. the cattle simply can't get any nutrients from the grass. Most supplements contain a mix and varying levels of energy, phosphorus and protein (urea), with emphasis placed on energy when often it is phosphorus that is deficient.

## How can producers identify what is deficient?

Producers can perform an analysis of what the cattle are eating, but as the cattle may graze over hundreds of hectares, it is difficult to know exactly what and in what proportions they are eating. By sampling the manure from a mob of cattle, you have collected exactly what the cattle have consumed.

Faecal NIR effectively uses the cattle as their own diet collection device. The manure is then tested by Near Infrared Reflectance (NIR) to determine:

- Forage nitrogen and protein
- Forage digestibility
- Forage energy content
- Amount of non-grass (browse) in the diet

Other diet criteria can be derived from these base measurements, however Phosphorus is determined by wet chemistry. The results of the manure analysis provides the producer with the necessary decision making information to identify:

- What key nutrients are required – energy, protein or phosphorus
- Stocking density - when to take the cattle off a paddock
- If they are performing well or badly given the quality of pasture available (poor performance could suggest trace element deficiencies or disease)

Kits are available from Symbio Laboratories to make the process of collecting, submitting and interpreting dung sample analysis very easy. They contain instructions, a sample submission form, sample jar and pre-paid post bag.

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