

## Alkalage – a nutritious, healthy forage you can make in the rain!

By the time you read this the Winslow contracting team will have hopefully made New Zealand's first pits of Alkalage and will have more to do through February. Alkalage is a high energy forage made from a cereal crop (typically wheat or barley but could be triticale or oats) allowed to mature to a high dry matter – ideally in excess of 72% and typically 80% dry matter. Maturity ensures the highest levels of starch and dry matter are achieved compared to cutting earlier for conventional fermented whole crop.

When making Alkalage, the cereal crop is cut with a Class forage harvester fitted with a specialist small grain processing mill which cracks the grain to ensure digestion by ruminants. Changes to the cutting height (full cut or high cut) offers the potential to adjust the quality of the forage according to the class of stock being fed. The chopped material is taken to a stack where Home 'n' Dry pellets are added which reliably:

- Preserves it by eliminating micro organisms
- Increases the pH by the production of ammonium salts
- Improves digestibility of the straw
- Increases the protein content of the crop, typically by 5%.

The preserved crop is not a silage - there is no fermentation so no energy is lost to the production of acids. Rather than preserving material by reducing the pH to about 4, pH is increased to about 8 – which is much more friendly to fibre digesting bacteria in the rumen which prefer a pH around 6. Once preserved the material is very stable and much less attractive to vermin than whole crop and maize silage.

### Typical feed value of Alkalage

(Based on winter wheat crop)	ALKALAGE <i>Full cut</i>	ALKALAGE <i>Hi cut</i>
Dry matter %	70-80	70-80
ME MJ/kg DM	11.0-11.5	12.3-12.5
Crude protein % DM	14.5-15.5	15.0-16.0
PH	8.2	8.0

Use of the Alkalage technique gives a very wide harvesting window of about 30 days. Unlike grass silage where feed value reduces rapidly with maturity, the feed value of cereals increases as more energy is converted to starch as grain is filled. Compared to combining, feed retention is enhanced because digestible chaff and small grains which are typically lost out the back of a combine are retained. A little rain during harvesting is not a problem because it reduces losses with less chaff being blown over the trailer.

Alkalage offers an exciting alternative to maize silage for dairy and beef farmers who are looking for a starchy feed with the added benefits that:

- Rumen conditions are enhanced by feeding high pH material and structural fibre that helps stabilise rumen pH
- The rumen microbes operate more efficiently and digest the diet more effectively releasing more nutrients to the cow
- The enhanced nutrient flow improves metabolic health and performance.

Alkalage will offer dairy farmers with run-off blocks the opportunity to produce high dry matter, home-grown, traceable forage which can be carted more cost effectively than conventional low dry matter forages like grass and maize silage. It offers arable farmers the potential of an alternative cash crop which can be harvested in the rain with potentially good cash flow without the need for additional grain storage. Perhaps more importantly, Alkalage offers ruminants (milking and dry cows, fattening beef cattle and sheep) a high dry matter feed which excels in respect to rumen health and therefore performance.



*A pit of Alkalage recently being made in Australia*