

Alternative wholecrop forage meets dairy units' idiosyncrasies

# Lupicaleage lifts farm limitations

Looking for a starchy alternative forage that can help increased feed intakes and milk production, and improve cow fertility? But limited due to chemical application restrictions and the need to avoid run off? One Yorkshire-based producer has discovered that a mix of lupins and triticale fits the bill perfectly on his units.

text **Rachael Porter**

**W**hen Bruce Dickinson was looking for an alternative starchy forage to help boost intakes he had to find something that would suit his farms – and neighbouring company Yorkshire Water. The answer was lupicaleage.

Bruce and his wife Alison farm at Annat Royd Farm in Ingbirchworth, near Sheffield, and at Far Royd Moor Farm nearby Thurlstone.

Both farms are in the catchment area for a nearby Yorkshire Water reservoir, which puts restriction on many farming practices.

The couple manage 180 Friesians plus 100 followers and around 30 head of beef in a unique set up.

Annat Royd is home to 60 first and second calvers and older cows are milked at Far Royd. The 'young' herd averages 7,200 litres and the older around 7,500 litres.

The cows calve all year round with the heifers mainly calving in June and July.

## Simple system

Winter forage had been exclusively grass silage with around 65 hectares of first cut and 40 hectares of second cut.

The feeding system was simple, based on the grass silage and concentrate in the parlour, but after one particularly poor pregnancy detection session in early 2005, Bruce

decided to consider adding a second forage and it was here that the farms' idiosyncrasies came into play.

"Both sit on what are predominantly shallow, free-draining soils and, with the fields bordering the reservoir, run off can be a particular problem," Bruce explains.

"This ruled out maize as an option while wholecrop wheat was a non-starter due to restrictions on chemical use.

*Magic mixture: a standing crop of Avon*



*Bruce and Alison Dickinson*

"But we wanted a starch-based forage to complement the grass and boost intakes. We also needed a crop that suited the land and the farming system. We have no mixer wagon and no desire to invest in one."

On close examination, lupicaleage seemed to fit the bill and offered the added advantages of have a good protein content, as well as being nitrogen fixing, due to its legume content.



Lupicalage was first introduced into the UK in 2003 by Soya UK and the crop has slowly developed a foothold.

David McNaughton from Soya UK says that the crop is not geographically limited like maize, but needs a fine tilth – similar to that used for sowing spring cereals – to ensure good establishment. On heavily panned fields it usually pays to subsoil first.

“The crop needs to be drilled during early to late April and the lupins need to be drilled to a depth of between 300mm and 500mm.

“Deep drilling also helps protect the crop from pigeon damage,” David explains.

The most common seed mix used in the UK is called Avon. This combines Logo triticale and Dieta Lupins.

The seed rate is 185kg/ha and 125kg of nitrogen should be applied at tillering, with an additional 50kg applied at stem extension.

### Rumen health

However Bruce grows his lupicalage without any bagged nitrogen, with the crop relying on slurry and farmyard manure.

The crop may require a growth regulator depending on the amount of nitrogen and slurry applied.

The crop is ready to harvest in August through to early September, by which time it's between 1m and 1.5m tall.

The triticale should be at the hard cheddar cheese stage and the lupin seeds should be full.

Yields will be between 30 and 40t/ha at between 30% and 40% dry matter. Typical analysis will be between 10 and 11ME, 12 and 14% CP, with starch levels of between 18% and 24%.

The starch provides a source of fermentable energy while the protein in lupins contains both degradable and by-pass fractions.

The combination of triticale straw and lupin stems provide digestible long fibre which promotes good rumen health.

Bruce uses local contractor Steve Watkins to harvest the crop and this year it took five hours to harvest the 10 hectares grown.

### Forage digestibility

Chop length is set at 25mm to get full benefit of the fibre and to prevent pod shatter.

And to ensure a stable product the clamp needs extensive rolling and an additive should also be used.

“Lupicalage is more fibrous than traditional wholecrop. It becomes less digestible as the crop matures but additives specifically formulated for legume crops, such as Biotol wholecrop legume, can help break down the stems and increase forage digestibility,” explains Biotol's Gary Copley.

“At the same time the additive must ensure a rapid fermentation to prevent nutrient losses and also prevent the growth of yeast and mould.”

Grass silage is fed using a shear grab with 3.5 blocks of grass to 1.5 of the



Quality forage: Biotol's Gary Copley examines a sample from the clamp

lupicalage and Bruce is very pleased with the results.

“We saw a yield increase of more than 1,000 litres per cow in the Annat Royd herd in the first year and milk quality also improved,” he says.

“Fertility has been good and we have been carrying more heifers as a result. And signs of heat are stronger, which makes bulling cows much easier to spot, and I think that has played a key role in increasing conception rates.

“I think we could grow more lupicalage in the future. It's certainly improved milk production and cow fertility and it also benefits the soil and helps us meet out ELS obligations.

“But attention to detail, particularly preparing a good seed bed, is vital for establishment. Great care must also be taken when harvesting and clamping the silage.

“Get these both right and the end result is a very valuable feed indeed,” he adds. |

