

Lucerne is an under-utilised forage crop on UK dairy units

# Protein-rich forage supports rumen health



Have you woken up to the possible benefits of growing and feeding lucerne? Read on and see if it's something that you could, or should, be adding to your unit's crop rotation and dairy herd rations to boost returns from forage and rumen health.

text **Matt Mellor**

**F**or a crop that ranks as the world's largest forage source, lucerne is surprisingly under-utilised in the UK, according to Jérôme Vasseur from French plant breeding company Jouffray-Drillaud. Speaking recently at a series of meetings, organised by forage experts Germinal, he said that it could be a far greater component of dairy rations on a large number of units, delivering high quality home-grown feed to help cut reliance on bought-in feed. "Lucerne is a highly productive crop, with yields of between 12tDM and 14t DM per hectare achievable in many

parts of the UK from three or four cuts," he said. "The forage produced is high in protein, rich in minerals, and has a high quality fibre content. Managed well, crops can perform for up to five years and, as a legume, it requires no nitrogen fertiliser inputs." He adds that lucerne does require free draining land and a soil pH of 6.2 or higher. "And it is also important to use varieties of the appropriate dormancy rating for northern Europe, but suitable conditions do exist throughout the UK." According to Germinal's Ben Wixey, there is now a lot of new interest in

*Lucerne is capable of producing between 12tDM and 14tDM/ha of high-fibre forage, rich in protein and minerals*

lucerne as UK producers look for ways to boost returns from forage and reduce costs of production, but historically the amount grown in this country has been negligible. "We estimate that the current UK area of lucerne to be between 5,000 and 6,000 hectares, which is a fraction of a percent of the temporary grassland area and less than 5% of the forage maize area," he points out. "Considering the benefits that lucerne offers, there is definitely potential for the area of lucerne to increase in the UK. Our aim is to provide the expertise required to help producer to capitalise on what can be a very effective forage crop."

## Real advantages

Mr Wixey explains that establishment is critical with lucerne and there is perhaps less margin for error than with other forage crops at this stage. However, with the right understanding of seed bed



Ben Wixey (left) and Jérôme Vasseur:  
*"Lucerne offers UK dairy producers an opportunity to boost returns from forage"*

requirements, seed rate, drilling depth and early management, this crop can offer real advantages.

Lucerne can be sown in the spring, typically from mid-April or when soil temperatures reach 8°C and the risk of frost has passed. It would then yield two or possibly three cuts later in the same season. Later sown crops (up to the middle of August) would provide three or four cuts in their first full season the following year. Spring sown crops can be undersown with barley or oats, with the cereal acting as a nurse crop to out-compete weeds and the first cut being taken as wholecrop cereal.

Mr Vasseur adds that plant breeding developments and seed treatment technology have combined in recent years to make lucerne more suited to northern European climates. "Varieties with dormancy ratings of 4 and 5 are

ideally suited for anywhere in the UK, and there are now strong performing options available, such as Timbale and Galaxie," he says. "In addition, pre-inoculation of seed with the rhizobium-type bacteria required for nitrogen fixation is possible, and seed is available with a nutrient coating to boost and secure establishment.

"We also supply seed in calibrated packs that provide an optimum seed rate per hectare, to help growers to achieve the correct plant populations.

"Traditionally lucerne seed rates have been measured in kilogrammes per hectare, which is far less reliable and can easily result in over or under seeding."

### Rumen conditioner

Lucerne has been an important part of the dairy ration at Rix Farm, based at Bolham in Devon, for the past decade. Initially grown for its protein content, it is now seen by the Frankpitt family as being as important as a rumen conditioner for their 320-cow Holstein herd, which has an average yield of 10,500 litres at 4.1% butterfat and 3.3% protein.

"Without lucerne in the ration we'd need to feed chopped straw. This is lower in energy and protein, so we'd have to feed more of it," explains James Frankpitt. "Lucerne also has a good intake factor."

## Lucerne facts

- Yield potential of between 12t DM and 14t DM/ha each year
- Between 19% and 28% protein, high in fibre, rich in minerals
- Fixes nitrogen, so no N fertilisers required
- 30 million hectares grown worldwide
- UK area <0.5% of temporary grassland and <5% of forage maize

The forage crop is grown across 16 hectares, with the silage typically delivering between 19% and 22% crude protein, between 10.9 and 11.2MJ/kg ME and between 38% and 40% dry matter with a D-value of between 68 and 70. It is fed in a TMR alongside maize and grass silage as complementary forages.

Having moved onto a cheese contract about two years ago, Mr Frankpitt says that balancing milk yields and constituents is always a challenge, but lucerne definitely helps to keep butterfat above 4%.

"If you keep rumen health and condition right, the butterfat tends to follow," says James, who runs the unit with his parents Michael and Alison.

With 10 years of experience, the family has learnt how to get the very best from the crop. Above all, they place selecting the most suitable fields and good establishment as the top priorities.

"We aim for a soil pH of around 7 and tend to use fields that are slightly sloping and free draining," explains Mr Frankpitt. "Lucerne doesn't want to lie wet or you will get a problem with grass coming through and it will kill off the plants."

### Soil-to-seed contact

When following grass or maize, the field will be sprayed off prior to drilling to ensure that the lucerne is sown into a 'clean' seed bed. After spraying, slurry will be applied and ground will be ploughed, and sub-soiled if required, before being power harrowed, rolled, drilled and rolled again.

Rolling is an important step to ensure good soil-to-seed contact. No slurry will be applied until the spring.

The Frankpitts grow lucerne varieties Timbale and Galaxie from Germinal and – with the required time and effort applied to establishment – they expect crops to last for four or five years. |

James Frankpitt: *"Lucerne silage acts as a rumen conditioner and complements grass silage and maize in the milking ration"*

