

Home-grown protein

Protein is an important part of a dairy cow ration but with soaring soya prices (around £373/t), many farmers are looking for alternative sources, says BGS technical project manager Louise Davison.

Now is a good time to review how winter feeding went and to work out how to fill the protein gap next year. Rely once more on purchased feeds, or is now the time to try growing protein on the farm?

While the UK does not have the climate for soya, many legumes will thrive and can be cost-effective.

Legumes grown for winter feed easily slot into the reseeding cycle, are low input, give a nitrogen boost to the soil, and can improve its structure. The two legume crops that grow particularly well in the UK, and are easy to store, are field beans and lupins.

Field beans

Field beans can be sown as a winter or spring crop. Winter crops are higher yielding

but have a greater risk of disease than spring-sown ones. The main advantage of spring beans is they can be sown once the worst of the winter weather is past.

They require little fertiliser and fix nitrogen for the next crop, whether this is new pasture, wheat or maize. They can be harvested and stored and easily included in the ration as part of a TMR. They have higher crude protein (CP), metabolisable energy (ME), and dry matter (DM) than maize silage (see Table 1), and may be much more cost-effective to grow than buying in soya.

Lupins

Lupins are best grown in a 50/50 mix with triticale according to protein specialist David McNaughton from Soya UK. This can be silaged at the end of August and stored in a clamp like maize. But unlike maize, this combination is suitable for all parts of the UK, including Yorkshire, Scotland, Cumbria, and Northern Ireland.

Lupins contain high quality protein and can be used as a replacement for soya due to



Lupins grow well with triticale.

their high content of sulphur amino-acids and bypass protein. They are also high in ME and DM (see Table 1).

This lupin: triticale mix is relatively cheap and easy to grow and can be sown and harvested with normal grass silage kit. The lupins also fix nitrogen in the soil so fertiliser requirements are low and some of the nitrogen is left for the following crop.

Table 1. Comparison of typical winter feeds by DM, ME, CP, with daily inclusion rates for dairy cows (DairyCo, Feeding improvement programme)

	Beans	Peas	Triticale	Wheat	Grass Silage	Maize Silage	Urea treated whole crop	Lupins	Soya
DM (%)	86	86	86	86	23 to 30	30	50 to 80	87	89
ME (MJ/kgDM)	13.1	13.5	13.5	13.7	11 to 12	11.2	9.5 to 11.5	14	13.8
Crude Protein (g/kgDM)	270	260	140	128	140 to 180	80	150 to 250	350	560
Inclusion (kg/day)	6	–	–	6	no limit	no limit	8	5	5

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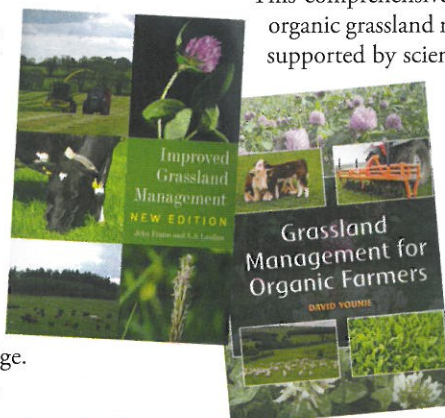
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