Ethanol distilling co-product offers promise for feed

Could increase demand for feed wheat
Substitute for soya meal in feed

By Sarah Henly

Importing less protein concentrate for animal feed by having a home-produced alternative to soya bean meal would not only bring economic benefits, it would also be desirable on environmental grounds, says the HGCA.

“There has been heavy reliance on imported soya bean meal for inclusion in animal feeds to raise protein levels, and now it is in short supply, which has seen its price rise,” says Harley Stoddart of the HGCA. “Fortunately we are investigating a sustainable alternative to replace substantial amounts of soya bean meal. Within two years, we hope to see a high-quality home-produced protein being used at volume by compounders.”

Dried Distillers' Grains with Solubles (DDGS) is not a new feed ingredient; it has been fed to cattle for more than 100 years. Around 250,000t/year is used in feed, but it is mostly barley and maize DDGS produced by whisky distilleries.

The new source of DDGS under investigation is from wheat. It is a co-product of ethanol distilling, and it will soon be available in large quantities from the two UK bioethanol plants, Ensus and Vivergo, says Mr Stoddart.

“An estimated 350,000t a year of wheat DDGS and 400m litres of ethanol a year is expected on the market after harvest as Ensus reaches capacity following its extended closure. Vivergo is hoping to have 390,000t a year of DDGS available through

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This project should benefit farmers, feed compounders and fuel producers and improve the sustainability of those three sectors of the industry. However, its application depends upon market dynamics.

It is encouraging that Ensus has reopened for business and should be up to full capacity by the end of next month.

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However, to compete with soya and other feed inclusions, wheat DDGS must not only be palatable and digestible, it must offer comparable nutritional quality, he stresses. It is hoped that it will be suitable for beef cattle, dairy cows, pigs and poultry (broilers and layers).

“We anticipate its nutritional composition will suit many livestock, but we must first quantify its value to every species through feeding trials. Then we must work out inclusion rates and appropriate formulations.”

The project is also looking to measure any variability there might be in wheat DDGS and identifying opportunities to enhance its nutritive value. It may be possible to improve liveweight gain, milk yield and the like. Commercial partners in this LINK project will test every aspect of quality in feeding trials.

“Though the distillation process is already efficient, it may be possible to modify it to get even more from the protein. There may be bolt-on processes that give a significant positive impact on energy and nutrient utilisation. For example, from a processing angle we are looking at issues of viscosity, or whether reducing the fibre content of DDGS would better suit non-ruminants,” suggests Mr Stoddart.

Using the co-product reduces the overall greenhouse gas balance of UK cropping, livestock and ethanol production. Interestingly, hectare for hectare, the amount of protein from wheat is comparable with that from soya, but with ethanol production as an extra.

The final challenge of the project will be to underpin confidence in farmers to use the new feed product. But then it isn’t really new – wheat to ethanol production has been used for years in gin and vodka, he says.

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A home-grown alternative to soya bean could help reduce feed costs.

AB Agri from next January, as well as 420m litres of ethanol a year.”

A third plant not yet built, Vireol, will be the smallest of the three UK ethanol facilities, with capacity to produce 150,000t a year of DDGS and 200m litres of ethanol. In total, the three plants will use about 3m tonnes a year of UK feed wheat.

Mr Stoddart expects the increased supply will provide feed compounders with a more cost-effective material to offset the high price of soya bean meal. That would be good news for the whole industry.