

BIOTALK

Delivering forage and nutrition technologies

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Plan now to reduce purchased feed costs

Careful planning will be required this season to optimise stocks of quality forage and allow more production from home grown feeds to help offset the impact of volatile purchased feed costs.



Stuart Goodinson

"In many parts of the country first cut grass silage crops were taken early resulting in lower yields but good quality," comments Biotalk Head of UK Business Development, Stuart Goodinson. *"The challenge now is to ensure adequate forage stocks while maintaining feed value."*

Mr Goodinson believes prospects for second and subsequent cuts will have been improved by recent wet weather but urges farmers to resist the temptation to let crops bulk up too much. *"It might seem a good idea to go for a very heavy second cut but this can be counter-productive if quality and intake potential are reduced as a result."*

"High yielding cows need good quality digestible forage and the watch word should be to ensure quality rather than quantity. Low quality forages can be very expensive to supplement. By carefully assessing stocks now it will be possible to develop plans to achieve both the quality and quantity required."

He advises calculating the tonnage of first cut and getting the silage analysed as soon as possible as this information will act as a base for planning future cuts.

"For some farmers the option will be to make more cuts of grass silage while for others wholecrop will be a viable alternative. The beauty of conserving cereals is that there are various options available depending on the type of feed required. By assessing grass silage stocks early it is possible to make an informed decision which will help reduce feed costs this winter," Mr Goodinson concludes.

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Options for cereal based forages



Biotalk National Technical Support Manager Roy Eastlake considers the options available to farmers looking to feed conserved cereals this winter.

“Developments in harvesting and preservation technology mean the harvest window for fermented wholecrop cereals has been extended. Farmers have more choice about the stage at which they harvest the crop allowing variety of products to be produced to fit specific circumstances,” Mr Eastlake explains.

“Harvesting can now be successfully carried out across a range of crop dry matters and growth stages with farmers able to choose whether to take cereals as fermented wholecrop, high dry matter fermented milled wholecrop or crimp depending on their particular circumstances and feed requirements. The key is to make the decision early and focus on optimising the value of the conserved crop.”

Where farmers find they are likely to be short of grass silage, Mr Eastlake advises making fermented wholecrop silage to provide sufficient total forage especially if maize is not an option. It will provide high levels of energy, starch and effective fibre and while cereal prices are high and may look attractive to farmers selling grain, it is worthwhile checking whether forage stocks are sufficient otherwise it could be an expensive winter.

“Traditional fermented wholecrop can be made successfully with wheat, barley, oats or triticale and will yield around 8-12 tonnes per acre depending

on whether winter or spring variety.”

While wholecrop is relatively easy to preserve, he advises the use of a crop specific inoculant as the high dry matter puts the forage at risk of heating and moulding during feed out. Fermented wholecrop can be harvested anywhere between 35-75% DM although harvesting at the ‘soft cheddar cheese’ stage equivalent to 35-45% DM is preferable as it maximises yield and nutrient content.

“Wholecrop is a high energy feed, rich in slow fermenting starch which combined with the effective fibre from the straw makes it an ideal rumen friendly feed. The National Forage Survey showed that farmers who fed grass and wholecrop together saw a significant yield response which in part will be due to better rumen function.”

There is also the option to delay fermented wholecrop harvest until the crop is 50-75% dry matter with grain at the hard cheddar cheese stage.

“Later harvested crops should be considered as a forage concentrate and will require processing or milling via the forage harvester to ensure all the grain is utilised by animal. Later harvested crops will have a higher level of starch but reduced levels of effective fibre due to processing which is necessary for grain at the later stage.”



“The final option is to leave the crop until it reaches 60-75% dry matter and harvest it as crimped grain. Again this is a great opportunity to utilise home grown feeds and although attractive to sell grain, for livestock farmers it must be remembered higher priced concentrate feed will have to be purchased back.”

“Crimp should be considered as a high energy, moist concentrate, replacing combined grain in the diet. Furthermore, as the starch in crimped cereals is fermented more slowly than ground or rolled cereals, it can be used to increase cereals inclusion rates in diets without increasing the risk of acidosis.”

“The crop is usually harvested with a moisture content of 25-40% before being passed through a crimping machine which breaks open the seed coat to expose the starch prior to treatment with an inoculant and ensiling.”

*“Both fermented wholecrop and crimped cereals need to be ensiled with a specialist inoculant to improve aerobic stability, inhibit the growth of yeasts and moulds and reduce heating. In numerous trials worldwide, inoculants such as **Biotalk wholecrop gold** and **biocrimp** which contain *Lactobacillus buchneri* NCIMB 40788 have been shown to produce a more stable forage and feed leading to subsequent improvements in productivity.”*

As crimping involves combining crops around three weeks earlier than a conventional harvest, it is important to make a decision to crimp grain as soon as possible.

“Both wholecrop and crimped cereals are very cost-effective on a tonne/DM basis. By assessing forage stocks early it will be possible to make the right harvesting decision to produce the most suitable form of conserved cereals, to ensure adequate feed stocks and help control overall feed costs,” Mr Eastlake concludes.

Making a success of crimping cereals

What steps can be taken to improve the quality of crimped cereals? We asked farm contractor Rob Elliott who makes 2,000-2,800 tonnes of crimped cereals every year for his advice.

Rob covers a 50 mile radius around his base in Devizes, Wiltshire, and crimps wheat, barley and maize for a range of dairy customers. He believes three factors have the biggest bearing on the success of the operation.

"The most important factor is organisation and communication. Talk to the contractor about your plans so everyone is ready to go when the crop is within the target dry matter range for good preservation. Don't leave everything to the last minute because if the crop is cut at the wrong stage it will be hard to make a decent feed.

"The next crucial thing is to be well-prepared. Get the clamp ready. Make sure it is clean and that the sides are well-sheeted. Then make sure someone is going to be available to roll the clamp and consolidate the crop properly before sheeting down tightly. The clamp should be built up and rolled in thin layers and you need to get the tractor as close to the walls as possible.

*"Finally, make sure the crop is cut within the target dry matter range. Apply a crop specific additive such as **bioCrimp** at the correct rate to ensure an effective preservation of the material, reducing dry matter losses in the pit and spoilage at feed out.*

"By paying attention to these areas, farmers will increase the likelihood of making a good quality feed this winter," Mr Elliott explains.



Crimping process in operation

Wholecrop fits the bill



The inclusion of wholecrop in the farming system has ticked all the boxes for one major Dorset farming business.

Maize silage had formed an integral part of the dairy and farming system but as Mark Ward farms manager for Velcourt who runs the Abbotsbury estate explains, a number of reasons left him looking for an alternative.

"We had grown around 75ha of maize but in 2008 the estate entered the ELS/HLS and maize was no longer appropriate. In particular we were concerned with soil and phosphate run off. We had also been restricted as to where we could grow maize and yields were beginning to decline. With the farm being largely heavy clay crop establishment was difficult and we weren't in a position to grow maize on the lighter chalk land.

"So we decided to try wholecrop as the second forage as it seemed to offer the same alternative forage features while having several other benefits."

In the first year spring triticale was grown but Mark now focuses on winter cereals.

"The crops are easier to establish and are lower risk. In the event of a crop failure we can always sow a spring crop. Winter crops give us a far better rotation."

The farm currently grows 68ha of winter cereals and 26ha of spring crops and yields have averaged 34 tonnes/ha giving a total crop of around 3,000 tonnes which is treated with **Biotalk wholecrop gold** and fed to the 800 cows with around 6,000 tonnes of grass silage.

"We like to take two decent cuts of grass silage but this is not always possible given the light land where some of the grass is grown. We are very dependent on getting rain at the right time, so this year's first cut was down. This means wholecrop will prove vital as our insurance policy to provide enough forage this coming winter.

"Wholecrop has helped reduce the variation in total forage yields which we used to see when we were feeding maize and grass. If 100 is the average yield, we used to see the total crop vary from 80-120, but with grass and wholecrop the range is closer to 95-105 which makes planning much easier.

"So it fits our system really well by supplying a consistent supply of good quality feed while fitting in with the rotation and the estate's environmental objectives," Mark concludes.



Wholecrop reduces costs and improves rumen health



Robert Marshall

Fermented wholecrop has been a key component of the farming system of brothers Robert and Norman Marshall who farm in a family partnership at Kincairnie Farms, near Lumphanan, Aberdeenshire and have been using the feed for over a decade.

The Marshall family runs 550 suckler cows made up mainly of Simmental, Shorthorn and Limousin crosses. First and second calvers are put to either Limousin or Simmental and recently Shorthorn bulls have been used to breed replacement heifers. The main sire for the herd is Charolais with progeny sold at 11-12 months old.

"We first started making fermented barley wholecrop 11 years ago" recalls Robert. "It was suggested by my agronomist Gordon Stewart from UAP. We had been feeding a lot of straw and barley in the cattle diets and saw wholecrop initially as a way of saving on milling and mixing wagon costs."

Like so many in the North East of Scotland, parts of the farm can be late for harvest while effluent can be a problem with grass silage. Spring barley wholecrop seemed to fit the bill as it allowed the contractor to get into the crop 3-4 weeks earlier.

*"We work closely with Gordon regarding harvest dates and trust our contractor to do a good job in the field. We do the pit work ourselves and use **Biotol wholecrop gold** to ensure good fermentation. Keeping the clamp well sheeted, weighted and tidy is crucial to its success, especially if we don't want to attract vermin. The final result is that we rarely get any wastage at all."*

The Marshalls now cut 80-100 acres of wholecrop. Stock are fed with a diet feeder with varying amounts of wholecrop included according to nutritional requirements.

"One of the biggest pluses since starting to put wholecrop barley in the diets is the drier dung," adds Robert. "We have cut our straw bedding use by nearly 50% at one farm which is very good as it can be difficult and expensive to get straw around here."

According to Mark McFarland, Biotol Regional Manager for the North East the principle behind feeding wholecrop is maximising rumen function. *"Many growing and finishing cattle are fed high levels of dry barley which is high in rapidly fermentable starch. Feeding too much rapidly fermented starch can result in a drop in rumen pH which will inhibit the rumen microbes responsible for fibre digestion. The consequence will be Sub-Acute Rumen Acidosis and reduced feed conversion efficiency (FCE).*

"The straw in wholecrop provides good scratch factor, needed to stimulate the rumen wall. It adds to the fibre mat and promotes cudging which increases the production of sodium bicarbonate, the cow's natural buffer, through increased salivation. This helps raise rumen pH, reducing the risk of acidosis and increasing fibre digestion."

Local Biotol distributor Gordon Stewart of UAP adds; *"The key to making good wholecrop is to treat it as if it were a good combinable crop and to harvest it at the right stage of maturity. This is when grain is at the soft cheese stage ensuring that it is digestible by the animal. As cereal wholecrop can be susceptible to heating and moulding due to the high dry matter, we always advise adding **Biotol wholecrop gold** to prevent yeast and mould spoilage as well as help release sugars from the fibre."*



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