

Make plans to boost your herd's milk output from forage

Forage focus to offset feed costs

At the recent National Forage Conference, organised by Biotol, the importance of maximising yields from forage to offset rising feed costs was the central topic for discussion and delegates were told that planning and attention to detail were essential.

text **Rachael Porter**

The current trends in purchased feed prices means that there is a real focus on getting more from forage, but this does not mean taking a hit on total yields. So says the Farm Consultancy Group's Max Sealy.

"Data from Kingshay shows that at every yield level, the units that produced more from forage had higher margins and lower overall feed costs," he told delegates. "Even herds producing more than 9,000 litres were able to produce 38% of milk from forage and save more than 2ppl, so there is no reason to assume that overall output has to decline if more is to be achieved from forage. However forage must be of good quality and be utilised well."

According to Francis Dunne from forage seed specialists Field Options, big benefits can result from selecting the most

suitable varieties. "If you want good quality feed, you need to grow the most suitable crops and varieties.

"Take maize as an example," he says. "The focus is often on yield, but it can really pay to focus on varieties that deliver higher energy contents. The current varieties list shows a range in ME from between 10.6 and 11.5MJ/kgDM.

"Each 0.1MJ increase in ME is worth 19 litres of milk per tonne of dry matter produced. For a 44t/ha crop at 33%DM, the difference in milk income between a 10.6MJ variety and an 11.5MJ variety is £255/t DM at 25ppl (see Table 1)."

Mr Dunne stressed that it was possible to select high quality varieties that also yield better than average, although he emphasised that maize yield is mostly down to how the crop is grown and

that variety choice will not overcome poor management. He also suggested that producers consider the effect of crop choice and harvesting date on wholecrop cereals. "There can be marked differences in DM yield and digestibility between species, which can be compounded by harvesting dates so it is important to plan wholecrop carefully." Once high quality forage has been made, the key is to use it effectively as two leading US dairy experts explained.

Sufficient fibre

Mary Beth de Ondarza, a dairy consultant from New York State, told delegates that while NDF is the common measure of fibre in the diet, not all NDF is the same and the aim must be to produce diets with adequate levels of digestible NDF.

"Dairy cows need sufficient fibre to help regulate rumen pH. Fibre stimulates chewing and saliva production while forming a rumen mat that slows the passage of grains and increases their digestibility."

However, providing poor quality, low digestibility NDF is counter-productive as it merely provides bulk that fills the rumen and actually suppresses dry matter intakes. In high producing cows with a well functioning rumen, forage

intake is limited by the bulkiness of the fibre as it fills the rumen.

"To drive dry matter intakes we need highly digestible NDF and research shows that every 1% increase in NDF digestibility increases DMI by 0.15kg. Digestible NDF drives intakes, which in turn drive milk production. Poor quality, low digestible NDF just clogs up the rumen, reducing intakes and yields." She argues that the objective should be to make good quality forages, paying particular attention to cutting dates.

"Don't leave the crop too late before harvesting and consider leaving a longer stubble so that the less digestible stem is left in the field. This applies equally to maize and grass silage."

NDF digestibility

"And take pride in your silage making and make the best possible feed you can. Then make sure the analysis includes a measurement of NDF digestibility. Analytical laboratories should really

take the lead and start including NDF digestibility on silage reports," Mary Beth concluded.

Michael Hutjens from the University of Illinois stressed that it is perfectly possible to achieve high yields per cow combined with high yields from forage and shared his 'golden rules' for achieving this.

"The key to profitability is to maximise production while using feed efficiently. My golden rule is to maximise feed efficiency with the target being 1.5kg of 3.5% fat milk per kg of dry matter consumed.

"Many herds achieve this level of efficiency from diets made up of 50% forage, 35% concentrates and 15% available by-products, moist feeds and so on. The challenge is for others to do the same.

"The ration needs a good balance of energy sources with plenty of soluble carbohydrates to fuel the rumen bacteria. Get the balance right and forages can be well used in high yield diets. I recommend

between 28% and 32% NDF with good digestibility, between 22% and 26% starch, between 4% and 6% sugars, and between 10% and 12% soluble fibre."

Professor Hutjens stressed the importance of physically effective fibre to encourage rumination. He advised providing 2.4kg of feed particles, between 1.7cm and 4.5cm in length, and recommends that producers spend time watching chewing activity in the herd.

"You should see at least 60 chews per bolus and cows need to spend between 550 and 600 minutes chewing the cud per day – between 60% and 75% of cows at rest should be chewing at any time."

Different groups of cows

He also explained how performance from forage can be improved by targeting different forages to different groups of cows, paying close attention to the cows' requirements at different stages of lactation.

"In high yielding cows, dry matter intake is limited by gut fill. High yielders have a large demand for glucose while in late lactation glucose demand is less and high levels can actually drive excess bodyweight gain.

"This means that high yielders should be fed higher starch diets and forages with high levels of digestible NDF, while stale milkers can have a lower starch diet with less digestible NDF.

"This might make for some challenges in how silage is made and clamped to allow different silages to be fed to different groups. But the benefits, in terms of more from forage and less from purchased feeds, will make this worthwhile," he added. |

Table 1: The difference in milk income when feeding different ME forages

| the range of ME (MJ/kg DM) values on the current list | litres/tonne of dry matter at 5.3 MJ/litre | extra litres/tonne of dry matter above 10.6 ME | extra value of each tonne at 25ppl | quality bonus on an 44t/ha crop at 33%DM (15tDM/ha) |
|---|--|--|------------------------------------|---|
| 10.6 | 2,000 | 0 | £0.00 | |
| 10.8 | 2,038 | 38 | £9.43 | +£56.60 |
| 11.0 | 2,075 | 75 | £18.87 | +£113.21 |
| 11.2 | 2,113 | 113 | £28.30 | +£169.81 |
| 11.5 | 2,170 | 170 | £42.45 | +£254.72 |

Mary Beth de Ondarza: "Digestible NDF is key"



Mike Hutjens: "Maximise feed efficiency"

