

# All in the chop

*Straw has the potential to fulfill several important roles in dairy and beef cattle nutrition. Luke James spoke to a nutritionist about maximising its potential and a beef farmer who has significantly increased feeding rate to good effect.*

Used tactically, and with specific goals in mind, straw can be a valuable inclusion in dairy or beef rations, according to Hefin Richards of Rumenation Nutrition Consultancy.

The two main roles are to provide structural fibre and – in non-production animals such as dry cows – to reduce the energy density of the ration. In either case, straw can only fulfil its function if it is readily consumed without sorting, which means the quality and presentation must be right.

Mr Richards says if farmers are planning on incorporating straw into a ration it's important to start with a product that is decent quality and free from mould and soil for example.

He explains: "It should also be chopped, whatever the intended role, as this will ensure it is not

sorted from the more desirable parts of the ration and left to be mopped up by the shy feeders in the group. I would recommend aiming for a chop length of no more than 50mm (2 inches) as anything longer than that will certainly have the potential to be sorted."

Wheat straw tends to be more brittle and easier to chop, so is generally preferable to barley straw as a ration ingredient, according to Hefin.

"It's important that straw is chopped adequately, and barley straw is typically more soft and pliable and therefore harder to process," he says. "If chopping straw in a diet feeder, make sure all the blades are in place and sharp – and allow sufficient time. In some cases, it might be necessary to pre-

chop the straw before other feedstuffs are added, or even chop the straw in another machine before loading it, if necessary."

## Straw as structural fibre

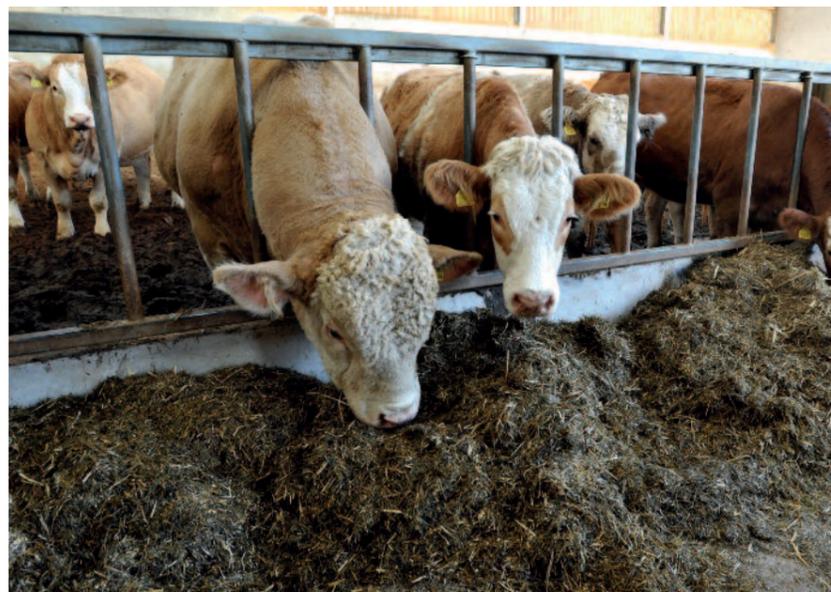
Chopped straw provides a concentrated source of structural fibre, creating a mat in the rumen that stimulates rumination. The amount of structural fibre required from straw depends on what else is in the ration.

"Inclusion rate in a milking cow ration could range from as little as 0.3kg/head/day up to as much as 1.5kg/head/day in a low structural fibre diet such as one high in maize silage, for example," says Mr Richards. "In an intensive beef ration containing no other forage, chopped straw would typically make up about 10% of the dry matter, or around 1.2kg/head/day.

## Straw to reduce energy density

Straw as a feed offers consistent nutritional value, being high in fibre and typically around 5MJ/kg ME and 4–5% crude protein. According to Hefin, it is generally a better option than lower quality silage as a way of feeding a low energy diet.

"I usually advise farmers to make the highest quality grass silage that they can, and avoid using mature grass to make silage for dry cows, for example," he says. "Straw is a far better option for youngstock and dry cows, being consistent in quality and offering the option of adding fibre as required, but again should be chopped to ensure it plays the intended role in the ration."



*If adequately chopped, straw can be fed with grass silage without the risk of sorting.*

## CASE STUDY Making full use of straw

Investing in a diet feeder with the capability of chopping and incorporating significant quantities of straw into suckler cow rations is described by Matt Cleland as the most notable change made on his family's beef unit in the last five years.

The 340 cow unit, based at Glebe Farm near Holme Lacy, Herefordshire, had traditionally maintained its spring calving suckler herd on grass silage, feeding what Matt describes as 'scary' levels of forage.

"Even though the aim with suckler cows is generally to restrict feeding – the opposite to dairy cows – we used to get through an enormous amount of clamped and round bale silage," he recalls.

The decision to introduce straw was subsequently an easy one, particularly considering the business runs around 182ha (450 acres) of arable alongside the sucklers and therefore has easy access to straw.



*Matt Cleland says replacing some of the grass silage with wheat straw has cut the cost of feeding the farm's suckler cows significantly.*

Matt adds: "We now include 4.5kg/head/day with the grass silage in the suckler cow's winter ration. Overall, by looking at the grass acres required per cow, we've probably reduced the cost of keeping cows by half. We are also maintaining the cows in more of an optimum condition and have seen fewer calving problems as a result."

Effective incorporation of straw with grass silage is essential, which is where the Kuhn Euromix 2280 diet feeder plays its part. Bought five years ago, this twin vertical auger machine with a 22 cubic metre capacity hopper will take large square straw bales (125cm x 90cm) and chop and mix these with round bale silage efficiently and effectively.

"We use wheat straw for feeding and aim to chop it down to around three inches," says Matt. "It takes about 20 minutes to mix a load that will feed 180–200 cows. There's usually enough time to do the

bedding down whilst a load is mixing, so the whole operation is pretty efficient."

With all cattle taken through to finish or reared as replacements for what is a closed herd, the Euromix is kept busy at Glebe Farm for three to four hours a day during the busiest periods. Finishing bulls, steers and heifers are all reared indoors on rations comprising of homegrown rolled wheat and barley, homegrown beans, fodder beet, distiller's grains and bought-in protein blend. In the past year the unit has finished over 100 bulls at an average 410kg carcass weight, although the aim is to finish bulls lighter to meet current market specifications. Heifers typically reach 330–360kg DCW in 16–17 months.



*Big bale straw is added to the suckler cow ration at a rate of around 4.5kg/head/day.*

## Fibre chopping efficiency

Maintaining the diet feeder is a must-do job, according to Matt Cleland, who says the most important aspect is to change the knives in good time.

"We have changed the knives every other season since we've had the Euromix," he says. "If for any reason we are late doing this, we'll soon be reminded by the extra time it's taking to chop and mix the rations. It's not a cheap exercise, but it's money well spent when you look at the extra time and diesel it takes when the knives are worn."

Kuhn has designed the Euromix with long fibre chopping as a priority, including a number of features in the design of augers and hopper that enhance chopping and mixing efficiency. 



*The polygonal shape of the hopper acts as a brake, holding the material for longer to increase the rate of chopping. Details such as the pitch of the auger coils and positions of knives on the auger all contribute to more efficient processing of long fibre.*