# How to reduce feed costs by using maize silage alternatives

High purchased feed prices are boosting interest in crimped maize and corn cob mix, so what is their dietary potential and how should producers manage them?

rimped maize and corn cob mix | comes to nutrition, as it typically (CCM) offer impressive feeding contains 25-30% bypass starch, provalues, according to Andrew Cook viding additional energy to the cow of KWS. Average crimped maize in a form that bypasses the rumen; analysis shows 65-70% starch and more than both maize and wholecmetabolisable energy (ME) of 14.5 rop cereal silages. MJ/kg dry matter (DM), while CCM has an average starch content of and wholecrop cereals in the diet, and 45-55%, with an ME of 13.0 MJ/kg.

are common feed ingredients in inclusion to 20% of the total mixed many European countries, including France, Denmark and the of acidosis." Netherlands. But until recently, they have not been fully utilised by UK milk producers," says Andrew. erally harvested four to seven weeks "Now, their popularity is growing, after maize silage, although cutin home-grown feedstuffs." Crimped the average number of heat units maize is a strong option when it over the season.

"It also complements grass silage promotes a healthy rumen. Cows find "Crimped maize and CCM it highly palatable, though limiting ration is necessary to negate the risk

The crop has a yield potential of 9-12t/ha of fresh grain and is genlargely because of the rising interest | ting decisions should be based on



CCM field operations are relatively trouble free with a low risk of run off

Varietal selection is impor- requirement and a very low risk of tant, and ultra-early varieties should be avoided for crimped maize production.

"They may be at risk of brackling in an over-ripe crop, which can cause issues when the grain is threshed from the cob. A variety with good 'threshability' and a grain to stover ratio (harvest index) of 50%-plus, as well as a high rating for standing power, are well suited," explains Andrew.

# **"CCM is extremely** palatable and can be included in a range of diets."

Several varieties will suit both maize silage and crimped maize production, permitting a degree of flexibility, and enabling growers to make last-minute decisions based on seasonal patterns. "It should be sown at a low seed rate of 85-90,000 seeds/ha, maximising the plants' light interception capabilities and helping accelerate the ripening process," Andrew adds.

Harvested using a standard combine with a maize-picker header attachment, crimped maize is made using specialist crimping rollers which crush the grain, exposing the endosperm. It has no drying

causing effluent problems in storage, due to its high dry matter content. "That said, I recommend filling the clamp as quickly as possible. Crimped maize will deteriorate if it is exposed to air, and the clamp should be tightly packed."

#### Corn cob mix

CCM, sometimes known as earlage, or ground ear maize, is formed from the plant's grain, spindle and sheath, and is usually harvested a couple of weeks later than maize silage.

CCM is extremely palatable for cattle due to its low ash content, and there are other benefits, according to Andrew. "It can be included in a wide range of dairy cow diets, but slots in well to a ration containing maize silage at a rate of 60-70%.



Andrew Cook, KWS



The delay in harvesting for CCM can be offset by using ultra-early varieties

Including a high-quality feedstuff like | maize silage harvest and when CCM complements the ration and adds 'scratch factor."

Like crimped maize, good standing power and a harvest index of 50%plus will produce the best results, and a high 'threshability' figure will make it easier to separate grain from stover.

Unlike maize intended for crimped grain, crops for CCM production can be sown at the recommended seed rate, but ideally not exceeding 100,000 seeds/ha.

## Variety choice

should be limited to compact or can later be mulched, adding to soil semi-compact hybrids with an FAO maturity rating between 150 and 210 as the cob must be fully ripe. "The delay in harvesting for CCM can be offset by choosing ultra-early varieties, which take fewer days to reach maturity compared with mainstream types," says Andrew. "These ultra-



#### CCM can slot well into rations

earlies can also be useful on farms with a large acreage, helping to spread the harvest window."

Harvesting for CCM requires a row-dependent grain maize header. Fortunately, a growing number of contractors, especially those in parts of the country with a large maize acreage, have geared up to add the one-pass system to their range of services.

"CCM can also be flexible," says Andrew. "If a maize crop becomes over-ripe, it can be made into CCM. Some growers will monitor their

the clamps have been filled, they will designate remaining fields for CCM production."

Also, if clamp space is tight, CCM lends itself to adaptable solutions: "I normally recommend using an additive when making CCM, and it can be stored in an Ag-Bag to save space if that suits the facilities."

### Field operations

Field operations are relatively trouble free, with the crop carrying a low risk of soil run-off and effluent, leav-Varietal selection for CCM crops | ing behind a stubble 'carpet' which organic matter, he adds.

> Both feedstuffs can be grown at the standard 75cm row width to allow the use of standard maize equipment, but production can also be geared towards 50cm rows. "Some producers prefer to use 50cm row widths because it suits a standard drill combination, as well as allowing the use of tramlines for crop management," explains Andrew.

"Crimped maize and CCM are viable alternatives to maize silage for dairy farmers. Successful production requires a change of approach compared with maize silage, but the agronomy is straightforward. And they both have something to offer producers who have access to suitable land, and are aiming to increase their percentage of home-grown ration ingredients."

# **Crimped maize** analysis

eshweight yield	9-12t/ha
ry matter	65-70%
arch	65-70%
E	14.5 MJ/kg DM
4	4.0

# **CCM** analysis

reshweight yield	12-18t/ha
Dry matter	45-55%
Starch	40-45%
ЧE	13 MJ/kg DM
ъH	4.3