

Making better conserved forage

Focus on maize silage

Maize silage has many benefits. It is high in energy, high in starch, cattle and sheep adapt to it easily in rations, it's palatable and has a consistent feed value.

Cattle given rations containing maize silage tend to have a higher dry matter intake (DMI) than those fed rations based solely on grass silage. Offering a mixture of maize and grass silage also increases DMI compared to grass silage alone. This extra DMI leads to higher energy intakes and when offered as part of a balanced diet, should improve daily performance and feed efficiency.

The digestibility of maize remains fairly consistent throughout the growing season. As the crop matures, the quality of stem and leaf declines, but this is offset by the increase in grain in the cob, which is highly digestible and high in starch. This is why harvesting at the correct stage is essential to maximise nutritional value.

Since maize silage has a relatively low protein content, it does need supplementation with a protein source when fed to cattle. This should be in the form of highly effective rumen degradable protein (ERDP) to improve starch and fibre utilisation. Sources of ERDP include rapeseed meal, pot ale syrup, beans, dried distillers' grains or feed grade urea (either included in a molassed liquid feed or as urea prills).

Generally, mineral content of maize silage is relatively low, so supplementation is required. Check with a mineral supplier/nutritionist for appropriate specifications to add to maize-based diets for cattle and sheep.

Table 1: Feed values for different forages

Feed type	Dry matter (%)	Metabolisable energy (MJ/kg DM)	Crude protein (% in DM)	Starch (% in DM)
Maize silage	28 – 35	10.8—11.7	8—9	25—35
Grass silage	22—32	10.5—11.5	11—15	-
Fermented wholecrop cereals	30 –45	10—11.5	9—17*	15—22

*Crude protein may be higher for cereals grown with bi-crops (eg peas, clover, vetches)

There are a couple of things to think about at this time of year.

Fermentation

The digestibility and starch content of maize silage improves with time in the clamp. Ideally, maize silage should be left for at least a month before feeding to allow pH and feed quality to stabilise. However, unlike grass silages, it can be fed immediately if needed urgently.

Silage analysis

Having an accurate nutritional analysis of conserved forages is essential when formulating rations so that they are used appropriately, accurately and cost-effectively.

Six weeks after harvesting, take several core samples from the clamp for testing. Continue to test samples from the clamp face throughout the season as feed value continues to change in the months after harvest.

A list of companies offering forage analyses can be found on the AHDB Beef & Lamb [website](#).

Winter field management

Maize fields can be a significant source of soil erosion. All maize fields must be actively managed to reduce the risk of soil, nutrient and agrochemical loss to the environment during winter.

Options for overwinter management include:

Undersowing maize with a cover crop – typically ryegrass

Broadcast the cover crop into the growing maize as the leaves of the maize touch across the rows, this is typically, at the end of June/early July. This reduces the likelihood of the cover crop competing with the maize in the early stages.

Typical grass seed rates are 10-15kg per hectare. The cover crop will green up soon after harvest, using any surplus nutrients and reducing water and soil loss from the field. This is a useful way to establish grazing or cutting leys.

Cultivating the field immediately after harvest to encourage water infiltration

Research has shown that cultivated fields absorb more water than those left unmanaged, so less nutrients, sediment and agrochemicals are lost.

Establishing an autumn crop

Sowing winter crops, such as winter wheat, after maize may reduce the soil wash and erosion risk.

For more information, see the BRP manual
[Growing and Feeding Maize Silage for Better Returns](#).