

Feeding maize silage

The starch, energy and intake characteristics of maize silage, together with its high dry matter yield potential, make it a good feed for beef cattle. However, maize is not suitable for growing in all parts of England. Farm location, soil type, altitude and field aspect must be considered carefully before deciding if and where to grow it.

Feed value

Typical maize silage feed characteristics:

- High energy, high starch (depending on variety and maturity at harvest)
- Palatable
- Consistent feed value
- Due to the low protein content, rations should be balanced with reasonably high protein feeds

Cattle fed 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 dry matter intake (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.

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 – first cut	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)*

Generally, the mineral content of maize silage is low, so supplementation is often required. It is important to consult a mineral supplier/nutritionist for appropriate specifications to add to maize based diets for cattle.

Silage analysis

Having an accurate nutritional analysis of conserved forages is essential when formulating rations, so that they are used appropriately, accurately and in a cost effective way. Analysis can be carried out six weeks after harvesting, and should include several samples collected from the clamp for testing. It is recommended that samples are tested from the clamp face throughout the season as feed value continues to change in the months after harvest.



Feeding maize

1. Finishing cattle

The high starch and energy of maize silage makes it ideal for finishing cattle. When finishing continental or dairy-cross steers, maize silage can be used as the sole forage source. For finishing heifers and native bred steers, it can be mixed with other lower metabolisable energy forages such as grass silage, whole-crop silage or straw to prevent unwanted fat deposition.

2. Cows

Maize can form a substantial part of a diet for autumn and late winter/early spring calving cows with calves at foot, in early to mid-lactation. During this phase, nutritional demand is high, double that of a dry cow and maize can provide a useful energy source. Maize silage contains too much energy to be fed ad libitum or as the sole forage source to dry suckler cows. It is therefore better suited to a mixed forage or straw-based ration.

Protein supplementation

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 high 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.

More information regards growing and feeding maize silage can be found in our Better Returns Programme manual, [Growing and Feeding Maize Silage for Better Returns](#).