

Maize

Summer cropping options

Key messages

Maize is a high yielding high quality forage grown through the summer

Suitable for high summer rainfall areas or irrigation, but germinates best at soil temperatures above 14°C

Best practice conservation is required to ensure low spoilage and wastage

Maize silage is often fed out during from autumn to early spring when pasture dry matter is limiting

Maize (*Zea mays*) provides a high yield of consistent quality forage. It is a summer growing annual crop that can provide a good bulk of feed or silage. It has a lower cool-tolerance compared to sorghum and millet, with higher yield potential and no prussic acid.

Maize is grown over the summer and is generally used as a silage product. Maize and grass silage fed together are an ideal combination as the grass provides protein and sugar, which is rapidly fermented in the rumen, and the maize silage is high in starch and fibre and is slowly digested in the rumen. Maize is suitable for a higher summer rainfall region, or on irrigation area, both as a stand alone crop.

Late autumn through to early spring is a time of the year when many producers feed maize silage due to limited pasture availability.

Performance

Maize has a moderate ME value when used as silage of 10–12 MJ ME/kg DM, an NDF of 40–50% but relatively low crude protein, typically around 7–8%. The real benefit is the production potential of maize, having a potential yield in excess of 20 t DM/ha.

Agronomy

Maize can be sown during spring, the ideal soil temperature for sowing being 14°C but it is possible to plant at 12°C if the temperature is on the rise. Planting earlier will not result in higher yields, it simply takes longer for the seed to emerge. It is critical to grow maize on well-drained soils. Consider raised beds if you experience water logging.

The sowing rate is dependent on the system and cultivar, and you should consult your agronomist when making this decision. Lower populations are for dryland crops and a high population is recommended for irrigated crops.

Good weed control is essential. Grass weeds are most competitive and must be controlled early. Shallow inter-row cultivation can destroy young weeds in the first three to four weeks after sowing. Once the maize crop reaches approximately 80 cm the plants will restrict weed growth as it outcompetes them for sunlight.

Birds can seriously affect crop establishment, particularly in small paddocks close to trees. Check the crop for leaf and plant damage by insects at least twice a week during the first six weeks after emergence. The most dangerous pests to look for are 'cutworms'.

Management

Pre-irrigate if conditions permit. Ideally you want to sow into moisture. Irrigating after sowing will cause the soil temperature to drop.

Crops continuing into late autumn pose several risks, including compromising the yield potential of subsequent winter crops (e.g. annual ryegrass, forage rape) and wet weather hampering the harvest.

Nitrogen, potassium and phosphorus are all important nutrients to optimise maize growth.

Feeding out

Manage the conservation process for maize carefully to make sure you get the highest return on your investment.

Planning both your infrastructure and management from the start will assist.

Aerobic spoilage during storage can result in a loss of up to 10% of your silage. Similarly, aerobic spoilage during feed out can result in an additional loss of up to 10%. These losses are avoidable by ensuring sealing of stacks at ensiling and proper face management of the silage stack.

Wastage of silage during feed out, as a result of spoilage or nonconsumption, can be anywhere up to 50%. Create a system to prevent cows trampling, camping, urinating or defecating on silage.

One disadvantage of maize is its low protein content. When more than 15kg (i.e. more than 5kg dry matter (DM)) of maize silage is fed per cow per day, then some form of protein supplementation is normally required.

There are potential risks of mycotoxins and mycoestrogen, especially where crop and ensilage management is sub-optimal.

If considering maize this summer, seek expert advice about variety, agronomy management, conservation and feed out strategies. Ensure you have the infrastructure to make the best use of your investment in maize.

Disclaimer

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