

Maize Crop Management



MAIZE:

Dry Matter yield:	12 – 18 t/ha
Fresh yield:	35 – 65 t/ha
Dry Matter:	25 – 35 %
Crude Protein:	7 – 9 %
ME (MJ/kg DM):	10.2 - 11.2

Maize is an extremely high yielding forage crop that produces high quality livestock feed at a very competitive price. It is an easy crop to grow once the basics are right with site selection being the most important. Maize can also be grown as a cash crop on tillage farms for sale to livestock farmers.

Site Selection: The ideal maize field will be well sheltered, warm with good deep soil, south facing, well drained and less than 100m over sea level. As the site moves away from this ideal field you need to use earlier maturing varieties or consider using plastic. Avoid compacted soils. Maximum height over sea level is 120m.

Rotation: Maize can be grown continuously in the same field. Weed control costs tend to increase and fungal disease attacks becomes more likely with continuous maize cropping but these challenges can be overcome.

Seedbed Prep: Till as for potatoes or sugar beet. A deep fine firm seedbed produced with a minimum number of passes is required for fast and uniform germination. Make sure to avoid compaction. Where compaction is a problem, subsoiling will be required and this can only be done when soils are dry.

Sowing period: Not too early and not too late. Maize is a slow starter and needs good growing conditions so wait until soil temperatures are over 8°C. It also needs every day of the Irish growing season to produce good yields of high quality silage so don't delay sowing.

Without Plastic: Sow from 15th April on good warm sites.

Best crops will generally come from sowings done before 10th May.

With Plastic: Sow from April 5th on good sites and best response from plastic will generally be achieved from sowings before April 25th

Seeding rates: Seeds are precision drilled usually in 75cm rows and at 4-6cm depth. Sow at 100,000 – 110,000 seeds per ha (40,000 – 44,000 seeds per acre). Later maturing varieties will benefit from the lower seed rates, starch levels and dry matter % will be improved.

Lime: Maize needs a pH level of 6.0 – 7.0 and soil analysis should be carried out before each crop.

Fertiliser: Fertiliser applications should be in line with the Nitrates Directive

Soil Index for NPK	Index 1	Index 2	Index 3	Index 4
Nitrogen	180kg/ha (144units/ac)	140kg/ha (112units/ac)	110kg/ha (88units/ac)	75kg/ha (60units/ac)
Phosphorus	70kg/ha (56units/ac)	50kg/ha (40units/ac)	40kg/ha (32units/ac)	0kg/ha (0units/ac)
Potash	250kg/ha (200units/ac)	225kg/ha (180units/ac)	190kg/ha (152units/ac)	80kg/ha (64units/ac)

NPK can be applied as organic (slurry or FYM ploughed down) or chemical fertilizer. Nitrogen fertilizer is best applied prior to the last cultivation. Top dressing N after emergence should be avoided as it can cause crop scorch. It is recommended when sowing maize to combine drill a Phosphorus fertilizer, and possibly some Nitrogen and trace elements.

Product	Rate per ha	Comments
Calaris	1.0 - 1.5 ltr	Apply at 4 to 6 leaf stage of maize. Use higher rate for weeds past 4 leaf stage. Contact activity with residual activity for up to 6 weeks after application.
Stomp Aqua	3.3 ltr	Mainly residual activity. Needs soil moisture for best effect.
Wing – P	4 ltr	Apply pre emergence to 4 leaf stage. Best option for crops grown under plastic.
Accent	40 -60 gm	Used mainly for grass weed control. Use up to 6 leaf stage of maize. Some variety restrictions on use.
Hurler	0.75 - 1.0 ltr	Apply from 3rd leaf stage of maize onwards. Generally used for late control of volunteer potatoes.
Dow Shield 100	1.0 - 2.0 ltr	Used mainly for control of thistles in maize.

Trace elements: Magnesium, Zinc and Manganese are most important. Carry out soil analysis to identify likely deficiencies. Trace elements can be applied at drilling in a starter fertiliser, this is recommended where severe deficiencies exist. Otherwise apply foliar trace elements from the 4 leaf stage.

Weed Control: Maize will not compete with weeds so effective control is essential. Control scutch and docks with Glyphosate before ploughing

Pest problems: All seed should be treated with an insecticide e.g Mesurol. This controls frit fly and acts as a crow repellent.

Wireworm: In fields where wireworm is likely to be a problem seed can be ordered treated with a systemic insecticide e.g. Cruiser.

Slugs: They feed on the leaves and stems and can do a lot of damage. Broadcast slug pellets at first sign of damage.

Leatherjackets: Roots and stems are attacked and plants killed.

Cutworms: Occasionally cause problems in coastal areas and can cause lodging.

Rabbits: Shooting, trapping and Rabbit Bait are moderately effective. Where numbers are very high put up a wire fence.

Disease: Disease is not generally a widespread problem in maize. However in wet seasons and particularly in coastal areas a disease called Kabatiella (commonly known as eyespot) can cause premature senescence of the leaves. "Eyespot" spores can be carried over on maize trash or stubble from the previous year. A fungicide can be applied preventatively before the maize crop gets too tall to drive through and this lessens the severity of the disease. Helminthosporium and Fusarium are diseases of less significance which can occur in wet seasons.

Harvesting & Storage Information: Aim to harvest the crop at 28 – 32% dry matter and 25% plus starch (usually in Oct). The harvester should have a grain cracker. Fill the clamp quickly and compact well. Consider using an additive when crop dry matter is over 30% to avoid pit face heating at feed out. Reduce pit surface waste by applying salt at 3kg/m² on the top and 6kg/m² on the sides and shoulders of the pit. Roll the pit after salt has been applied. Cover with two polythene sheets to exclude air completely and weigh it down well. Leave the pit sealed for at least two weeks before opening. Protect the clamp from birds and rats.

Feeding Information: Maize silage is a high energy low protein forage feed. It is an excellent feed for milking cows and fattening beef animals. Diets with maize silage must be properly balanced for protein, minerals and fibre and nutritional advice should be sought if in doubt.