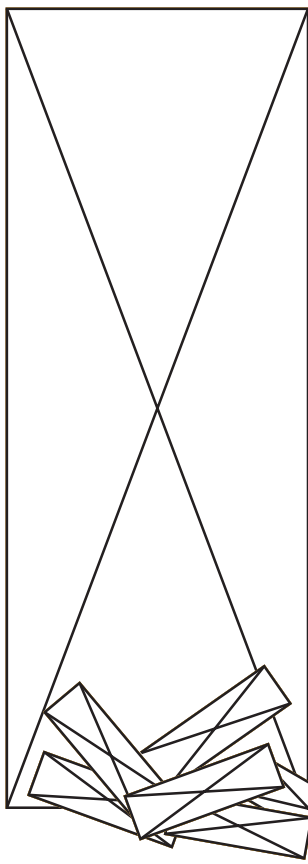
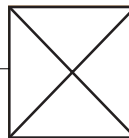
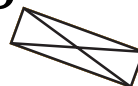


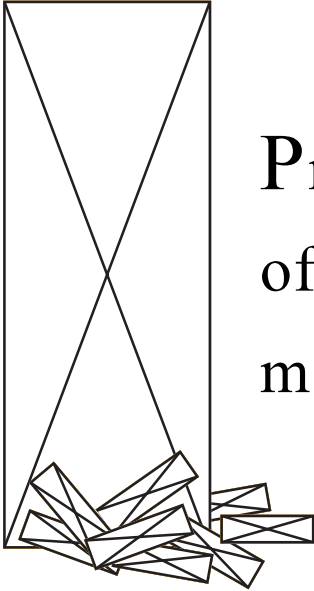


National Department of Agriculture
ARC-Grain Crops Institute



Production of green mealies





Production of green mealies

Adapted by the ARC – Grain Crops Institute from
Garden mealies for six months by J.N. Marais and ARDRI,
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Production of green mealies

Maize is a relatively easy crop to grow. The maize plant is cultivated and harvested more easily than most other food crops. It is also less prone to diseases than vegetables in general, and is fairly drought resistant. The home gardener who does not want to make the effort required for a sustained supply of a variety of vegetables, but who would nevertheless like to use his vegetable patch profitably, should consider a system of sequentially planted green mealies. This will have to be done according to a strict schedule to prevent a feast or famine situation.



Nutritional value of maize on the cob

- ① Green mealies are more nutritious than processed maize products such as maize meal or samp because the milling process removes most of the germ and fibre.
- ① The germ is the most nutritious part of the maize kernel.



Preparing a dish

- ① A green-mealie dish can be prepared easily.
- ① You only remove the husks and then boil for 20 to 30 minutes.
- ① Green mealies can also be roasted in their husks.



Development of the maize plant



- ① The maize plant's rate of development (how fast it grows from planting time to time of harvest) is mainly determined by temperature.
- ① Maize develops much slower during the cooler months than in the hot summer months.
- ① Differences in growing season lengths also occur.



Growing conditions and crop size

- ① An area of approximately 250 m² can provide a family of three with green mealies for about 6 months, providing that planting dates are extended over a period of time.
- ② Growing conditions will naturally determine the size of the crop. Water is usually the main limiting factor. Lower plant densities will reduce the risk of total crop failure.
- ③ Soil should be at least 75 cm deep, but shallower soils may be cultivated if these are irrigated carefully. Over-irrigation of shallow soils can result in waterlogging and salinisation.
- ④ Daylength and heat units are important factors which determine crop yield. A crop which produces cobs during midsummer can nearly double the yield of a crop harvested in May.
- ⑤ The plant converts solar energy into starch. During midsummer the light intensity is much greater (rays are more direct) than in winter. The daylength in summer can therefore be more than double that during midwinter. The area planted from mid-January should be double that of earlier plantings.

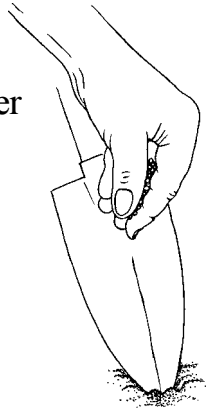
⑥ The difference in crop size between winter and summer harvests is more pronounced in the southern parts of the country than in the northern parts.



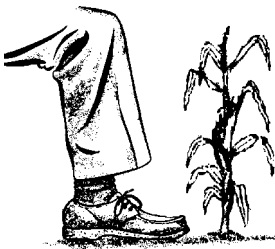
Fertilisation

① The home gardener is usually not able to make use of professional soil testing services. Nevertheless, growers should observe the response of their crops to their own fertiliser programmes and make adjustments if necessary. Maize responds well to top dressings of nitrogenous fertiliser up to the tasselling stage if the plants are showing signs of a nitrogen deficiency.

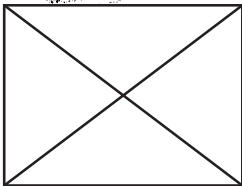
② The quantity of 3:2:1 (32) fertiliser which can be held between the thumb and the other fingers of one hand applied to the planting hole is usually sufficient for maize, except in sandy soils.



③ When the crop has reached knee height it should receive a side dressing of the same quantity of LAN (limestone ammonium



nitrate) or urea, if the leaves do not appear dark green and vigorous. Wash the nitrogenous fertiliser into the soil within reach of the plant roots, otherwise it will largely be wasted.



④ All compost that the home garden can provide should be used and applied 3 to 6 weeks before planting.



Planting procedures for green mealies

- ① The planting schedule set out in the table below concerns summer plantings of sweetcorn, which will yield regular harvests up to the middle of February, followed by regular harvests of high lysine or normal dent maize until the end of May.
- ② Many people prefer sweetcorn to other maize, but those who do not, can replace sweetcorn with other maize cultivars of their own choice from the start. In most parts of the country sweetcorn is severely attacked by streak disease when planted later than the end of December. However, late plantings of sweetcorn are often successful in the drier parts of the Western Cape. Maize may be planted as soon as the possibility of frost is over.

Planting schedule for green mealies

Sweetcorn (cv. Jubilee)

Late spring and summer plantings

October	5	14	23	} Direct sowing on the dates indicated
November	2	10	18 26	
December	6	13	21 28	

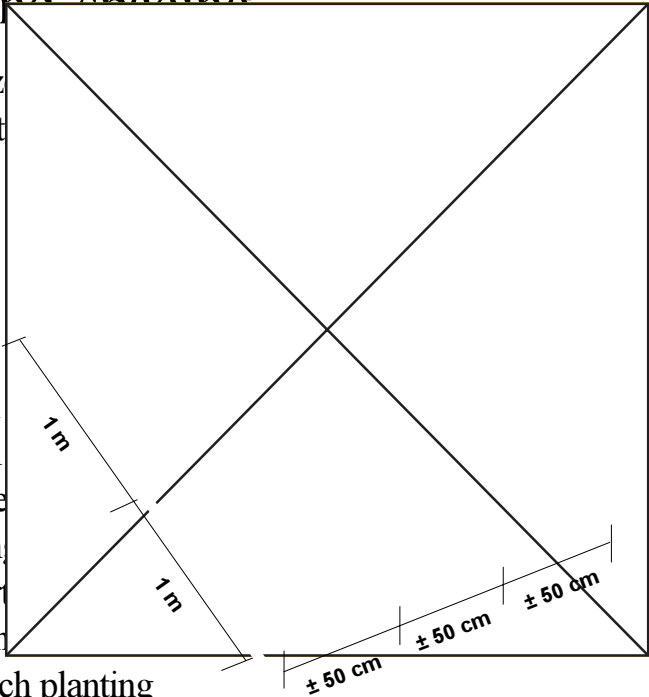
High lysine or normal dent

October	5	14	25	} Direct sowing on the dates indicated
November	10	18	26	
December	6	13	21 28	
January	4	11	17 24	



Planting and spacing

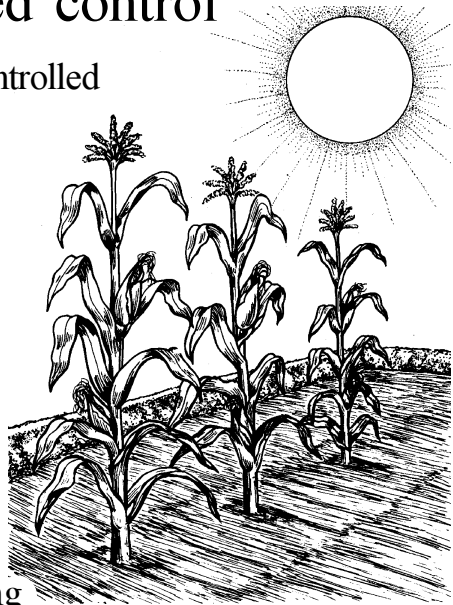
- ① Plant the maize spaced 1 m at intervals of 50 cm within the row, or when water is in short supply, 60 cm apart. With an abundant water supply, spacing be 30 cm apart a hole with a hole or spade at each planting station.



- ② Pour about 2 ℓ of water into the hole. After the water has drained, position the seed in the hole which should be about 5 cm deep and cover with soil.
- ③ About 30 seeds can be planted at each planting date for a family of four.
- ④ Planting of high lysine maize and other hybrids such as SR 52 should commence early in October and run concurrently with the planting of sweetcorn until the latter is uprooted.

Mulching and weed control

- ① Weeds should be strictly controlled at all times, the ideal is to prevent the weeds reaching seed-forming stage. This sounds nearly impossible but experience has proven that it can be accomplished in a food plot of 625 m² on a part-time basis, when weed control is combined with mulching.



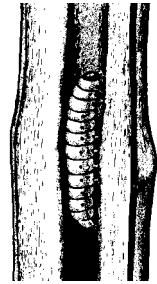
- ① Mulching involves covering the soil surface with a layer of organic matter such as plant clippings, compost, pine bark and wood shavings, or an inorganic layer (black plastic sheeting or stone).
- ① Apart from limiting weed growth, a mulch conserves water and improves soil fertility when organic matter is used as a mulch. The greatest disadvantage, however, is a possible increase of certain pests and diseases.
- ① After harvesting the crop should be cut off at soil level. The stalks can be chopped up with a panga, hand axe or spade and left on the surface as a mulch.
- ① Lawn clippings form an ideal mulch when spread between maize rows. It smothers weed seedlings and inhibits the germination of many weed seeds.



- ⑦ It is not necessary to till the soil in order to grow maize, provided that no hard layer occurs in the soil. The less the soil is disturbed the better. Each time soil is ploughed dormant weed seeds are brought to the surface where the higher temperature and, in some instances light, stimulate germination of various weeds.
- ⑦ Seeds at deeper layers can remain viable for many years without germinating.
- ⑦ A mulch cools and shades the soil surface, thereby making conditions less favourable for the germination of weeds.

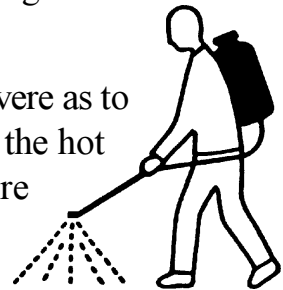
Pests and diseases

- ⑦ Maize is relatively pest free. It is, however, important to control stalk borers. Dipterex (trichlorfon) or Bulldock (betacyflutrin) should be applied to the whorl when small holes appear on the leaves. The application may have to be repeated if the pest has not been brought under control.



Maize stalk borer

- ⑦ Streak disease can be so severe as to rule out maize as a crop in the hot areas in northern KwaZulu-Natal. There is no effective control of this disease, except for carbofuran.



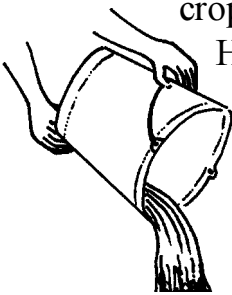
- ① Leaf-blight diseases such as *Helminthosporium* can attack late plantings, causing total crop failure in severe infestations. Leaf blight may be controlled in some cases by sprays of Captab or copperoxychloride.
- ① Birds can be a serious pest in late plantings and cause great damage. Once they have discovered the succulent young maize kernels of cobs which have entered the milk stage, they can totally shred all the cobs in the vicinity. Therefore, at the first sign of bird damage a paper bag could be slipped over the cob. Save empty flour, sugar and maize-meal bags for this purpose.

Irrigation

- ① The high cost of municipal water rules out irrigation from this source. It is therefore necessary to make every effort to maximise the efficient use of water.



- ① It has been found that the water actually taken up by a stand of maize amounts to only about 250 mm for a good crop under average South African conditions.



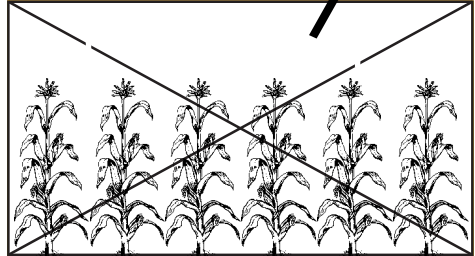
However, it is necessary to provide about double this quantity, because more than half of the water received by a stand of maize may evaporate from the soil surface. When weeds are present water loss can be even greater.



How to achieve maximum efficient use of water

7

- ⑦ Control weeds rigidly.
- ⑦ Avoid over-irrigation.
- ⑦ Always let the plant be the guiding factor.



Observe the crop closely

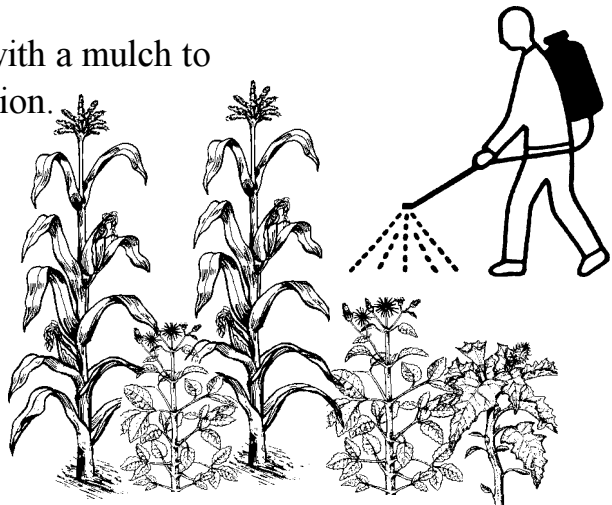
and apply water only when it seems necessary. When by mid-morning the leaves appear slightly wilted, it is usually a sign that the crop has to be irrigated.

- ⑦ Use an efficient method of water application. Hand-held hoses work well. Dripline irrigation is the most efficient method. Short furrows with blocked ends are also effective.

- ⑦ Cover the soil with a mulch to reduce evaporation.

- ⑦ Adequate quantities of fertiliser should be applied.

- ⑦ Control pests and diseases.

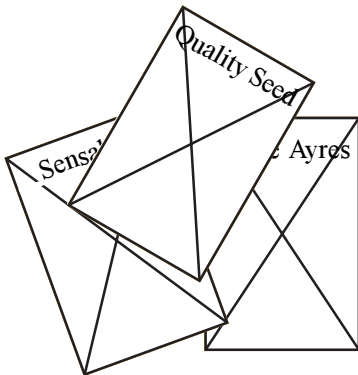


Cultivars

A list of recommended cultivars is presented in the following table.

Sweetcorn and dent maize hybrids recommended for use as green mealies

Cultivar	Type	Supplier
SR 52	White dent	Sensako
SC 701	White dent	Sensako
HL 19	White high lysine	Quality Seed
HL 23	White high lysine	Quality Seed
PAN 6549	White dent	Pannar
SNK 2665	White dent	Sensako
SNK 2147	White dent	Sensako
Jubilee	Yellow sweetcorn	Starke Ayres
Contender	Yellow sweetcorn	Starke Ayres

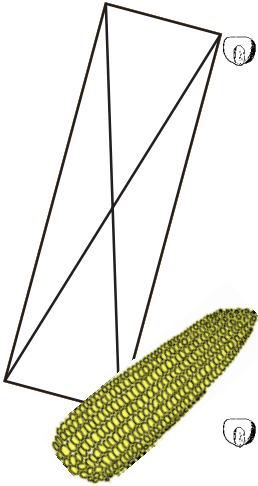


It is important to note that hybrid varieties should be used rather than open-pollinated cultivars. Some growers use their own seed or old open-pollinated cultivars. This is uneconomical. The small extra outlay in buying hybrid seed will be well worth the expense. Hybrid seed gives a better yield than the open-pollinated cultivars under almost all conditions.

Palatability is a very important consideration when producing green mealies. Some people find certain new sweetcorn hybrids too sweet and bland. Jubilee and Contender combine excellent growth with good flavour.



Harvesting stage



- ① Maize grown for green mealies should be harvested well before the plants reach maturity. Preference with regard to the most palatable stage of development varies from person to person, but the early dough stage is generally regarded as the best time for harvesting green mealies, which is about 3 weeks after flowering.
- ② If the cobs are to be roasted rather than boiled, they can be allowed to develop further.
- ③ The critical stage for harvesting usually lasts only about four days, but this period can last up to eight or nine days for maize harvested in May. Sweetcorn retains its palatability longer than normal maize.

