

GOOD AGRONOMIC PRACTICES FOR MAIZE FARMING

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➤➤➤ GOOD AGRONOMIC PRACTICES FOR MAIZE FARMING

Increasing maize yield levels per unit area (productivity) is the major driver as far as achieving food surplus is concerned. Improving maize productivity has immense benefits to the farmer and the nation at large.

Basically, what a high productivity level means is that a farmer will be producing more for less in terms of fewer resources (variable costs) and less land area, which has positive implications on enterprise profitability and sustainability. At the farm level, increasing yield per unit area helps reduce the cost of producing a tonne of maize grain.

➤➤➤ PRE-PLANTING OPERATIONS

1. Start with a well-conditioned soil

Soil pH is an excellent chemical indicator of soil quality (acidity/alkalinity) and its ability to avail nutrients to the crop. A well-conditioned soil has high Fertilizer Use Efficiency (FUE). Liming generally 'sweetens' acidic soils by correcting pH to optimum levels. The optimum pH range for maize is 5.5 to 6.5 based on a Calcium Chloride scale.

1. Lime reduces the availability of toxic elements in the soil such as aluminum and manganese.
2. Liming improves the soil's physical structure, resulting in good crop emergence and stand, greater root proliferation, and improved nutrient uptake.

Good Agronomic Practices (GAPs) ensure that all pre-planting, planting and post-planting operations are followed in simple steps.



It is therefore important to maintain or condition soils to optimum pH levels (5.5 to 6.5) for maize. This can be achieved by liming following recommendations from soil analysis results.



➤➤➤ 2. START ON A WELL-PREPARED SEEDBED

Thorough land preparation is essential in maize if the crop is to be grown productively and profitably. In fact, successful crop establishment is centered on good land preparation. Conventional land preparation should target the following aspects:

1. To loosen the soil and to form a fine tilth-this aids good seed-soil contact and emergence
2. To control weeds and start on a weed-free
3. seedbed
4. To conserve moisture and improve drainage and water movement in the soil.

➤➤➤ 3. START WITH THE RIGHT SEED VARIETY

Choosing the right seed variety contributes significantly to increased yields per unit area. A maize bumper harvest begins with choosing the right hybrid seed variety. Farmers should always select hybrids with high yielding ability and good defensive agronomic traits that make them adapt to the current climatic and biotic conditions. Productive farmers target the right variety for their ecologies and use only certified seeds for assurance of performance. SC719, SC649, and SC612 are suitable for areas with medium to high rainfall while series like SC651, SC510, and SC645 are suitable for areas with low rainfall patterns.

➤➤➤ 4. AIM TO ACHIEVE AN OPTIMUM POPULATION AND EVEN STAND

A seed rate of 20 to 25 kg is required per ha (per hectare) depending on the seed size while 10 kg is enough to plant 1 acre and 5kg for half an acre.

Establishing an optimum population that allows a hybrid to maximize its yield potential. A good start for the crop offers the best opportunity for higher yields. Farmers are encouraged to always aim to achieve optimum population levels depending on varieties, rainfall, and nutrition-related conditions. Farmers are advised to follow practices that will enhance stand establishment. Adjust seeding depth according to soil conditions and monitor planting depth periodically during the planting operation and adjust for varying soil conditions.

- A spacing of 75cm (0.75m) between the ridges and 25cm (0.25m) between plants is recommended with one seed per hole.
- A mixture of paraquat and atrazine can be used as a pre-emergence herbicide and sprayed not more than 3 days after planting.
- Fertilizer Application, such as Nitrogen, Phosphorus and Potassium (NPK) is applied as a basal application at the rate of 6 to 8 bags per ha which translates to a full bottle cap per plant. it can be applied at planting or at 10 to 14 days after planting.



➤➤➤ TIME OF PLANTING

The time of planting has a major effect on the yield of a maize crop as yields decrease with late planting. It is advisable to always plant with the first effective rains. A maize crop that is planted before the start of the main rains has a more vigorous root system and it is therefore beneficial to plant early. Planting early also lengthens the growing season.

➤➤➤ FIELD MANAGEMENT OPERATIONS

WEED AND PEST CONTROL

It is important to start with a weed-free field, especially for the first 10-12 weeks of a maize crop cycle as this is the period when more than 60% of the available nutrients are used/required by the crop. So, competition from weeds must be kept to a minimum or to zero. Weeds during this period have a dramatic effect on yields. It is generally advisable to maintain a weed-free maize field throughout the growing season. Generally, failure to control weeds during the first five weeks of the crop cycle leads to a 50% yield reduction. Weeding can be done manually or by application of a selective herbicide.

➤➤➤ FALL ARMYWORM

Fall Armyworm is proving to be a menacing pest, which threatens farmer productivity and yield forecast. Fall armyworm can attack the plant at various stages of its life cycle. It is important to scout fields every 2-3 days and make spraying decisions early and with the appropriately registered pesticide. Spraying should be done early in the morning or late at night.

➤➤➤ Urea application (Top dressing)

Top dressing is the application of Urea.

Top dressing should be applied when the maize is at 3 to 6 Weeks After Crop Emergence (WACE). Top dressing splits may be recommended in sandy-to-sandy loam soils. (2 applications of urea).



➤➤➤ SPACING WHEN INTERCROPPING

Spacing when intercropping

Maize can be intercropped with legume crops such as common beans and soybeans in areas with sufficient soil moisture.

➤➤➤ FALL ARMYWORM

Where intercropping is done, adjust the inter-row spacing as shown below:

- a) two rows of maize at 90cm by 60cm with two rows of beans or soybean at 50cm by 20cm with two seeds per hole for each crop,
- b) one row of maize with two rows of commonbeans or soybeans at a spacing 100cm by 25 cm for maize and 50cm by 10cm for beans with two seeds per hole for each crop.
- c) one row of maize with three rows of common beans or soybean at 120cm by 60cm and two seeds per hole for each crop.

Plant spacing in a, b and c above will reduce maize the population of maize plants in the field by 10, 20 and 40, respectively.

➤➤➤ HARVESTING OPERATIONS

The maize crop is usually harvested when the cobs are properly dried or when they reach physiological maturity (30-35% moisture content) or when the maize cob's husks and stands become deep brown and dried. Also, a manual moisture level check could be done by gently peeling off part of the husk of the cob while still on the plant and gently removing 2-5 kernels, If the kernel is wholesomely removed without cracking, then it is time to start

HARVESTING. HARVESTING YOUR MAIZE EARLY AND AT THE RIGHT MOISTURE CONTENT HELPS TO PREVENT POST HARVEST LOSSES WHICH MAY RESULT FROM RAINFALL DAMAGE TO COBS LEFT ON THE PLANT AFTER MATURITY, THEFT, AND RODENT ATTACKS. END