Cultivation Process for Wheat

Maize has and will continue to play a large and important role in Africa’s food production. It is the principal staple food in many parts of East and Southern Africa. In West and Central Africa, it is a major source of energy, especially in parts of Côte d’Ivoire, Ghana, Benin, and Nigeria.

Maize (Botanical name=Zea mays) has an extremely wide distribution, growing across a broad range of agro-ecological zones. It is grown in all countries of Africa, but it is essentially a crop of warm regions where moisture is adequate. The Guinea savanna zones of West and Central Africa offers the best ecological conditions for the crop, meanwhile, the mid-altitude regions of East and southern Africa are also suitable for its production. Semi-arid or equatorial climates do not support the growth of maize conveniently. However, drought-tolerant cultivars that are suited to semi-arid conditions are now available.

**Uses of Maize**

Maize is a versatile crop. This means that every part of the plant has its own economic value. Maize grain is used as food [Boiled, roasted, or ground into meal for porridge and pasta], as feed for livestock and poultry, and as raw material for many industrial products [Starch, oil, beverages, beer and alcohol, flour, sugar, cornflakes etc.]. The leaves are used as fodder for goats, cattle, and sheep. The stalk and cob of the maize plant can all be used as fuel and the ash is sometimes used as a substitute for salt.

**Soil Type and Site Selection**

Maize can be grown on a wide range of soils, but performs best on well-drained, well-aerated, deep soils containing adequate organic matter and well supplied with nutrients. The high yield of the crop reduces soil nutrients; therefore, it should be grown as the first crop in crop rotation. To ensure good yields, stay away from sites with trees, shady areas, and ant hills. Maize is sensitive to salinity and does not tolerate waterlogging, therefore, avoid muddy, compacted, and clayey soils.

**Soil Test**

Maize can be grown successfully on soils with a moderately acid environment, having a pH value within the optimal pH range of 5.5-7. Any pH level outside this range will increase mineral toxicity and make the soil nutrient deficient. A soil Test can be carried out on the soil to determine the pH level. Nitrogen, potassium, and phosphorus test should also be done on the soil to help you determine a fertilization program for maximum yields. Soil Research Institutes, Universities, and Private laboratories are good places to go to with test samples of the soil.

**Temperature Requirement**

Maize requires abundant sunlight for optimum yields. An average minimum daily temperature of 20°C is adequate. Optimally, temperatures between 25–30°C is suitable for proper growth and development. Maize performs poorly in cold regions having temperatures below 5°C, and areas having temperatures above 40°C. These temperatures ultimately lead to the death of the plant.

**Land Preparation**

A wide range of land preparation methods is used in different agro-ecological regions of Africa. Essentially, any method, whether chemical, mechanical, or manual, that can adequately remove weeds and keep the soil loose for good seedbed should be adopted.

Farmers commonly use fire to reduce excess vegetation on their farmland, and this practice adds potassium salts and other meager elements to the soil. Some other farmers incorporate residues of the previous crop into the soil which later decay to form humus. It is advisable to apply organic manures before ploughing to improve soil structure and supply nutrients.

For large scale farmers, when clearing and uprooting trees, ensure that your clearing method will preserve the topsoil of your farm land, especially when clearing is done mechanically.

In land preparation, the soil is manipulated to optimize conditions for proper growth and development of the maize plant. Ridging or heaping is usually done on heavy soils, to improve drainage. Ploughing the farmland optimize soil temperature and moisture condition, encourage root development and reduce weed competition.

It is important to plant immediately after land preparation in order to allow maize to get ahead of weeds.

**Maize Planting**

Maize is propagated from seed, and its yield is strongly influenced by planting practices such as; time of planting, depth of planting, and method of planting.

**Time of Planting:**

Early season maize in the Forest zone is usually planted between the middle of March and the first week of April. However, because of changing rainfall pattern, maize sowing is recommended to be done as soon as soil conditions and temperature are favourable and the rainfall is well established. Delayed planting may lead to the incidence of diseases and insect attacks. In late season, popcorn is planted, to enable proper drying of the maize for optimum popping expansion.

It should be noted that maize planting time is not such a critical factor in areas where irrigation farming is being practiced.

**The depth of Planting:**

The sowing depth is commonly 3–8 cm, depending on soil moisture, air conditions, and temperature. Planting depth between 2-4 cm is adequate for moist soil, while deep sowing, between 5-8 cm, is recommend for dry soils. Whatever depth of planting you adopt, ensure it is uniform for all maize seed planted, to allow uniform plant growth.

**The method of Planting:**

Planting is done either by hand or mechanically, and it may be done on hills or in rows, on ridges or on flat land. 1-3 seeds of maize are planted at 75-85 cm spacing between rows, and 25-40 cm spacing in a row. Wide spacing results in more weed growth and increases erosion. To obtain a high yield, a uniform crop stand is very important.

Hand planting is the oldest and commonly used method of planting maize. When planting by hand, the seed is dropped in holes made with a stick or hoe and the holes are covered with soil. This method makes it easier to apply fertilizer at the same time of planting.

Mechanical planting is quicker than hand planting; it allows you to plant maize on a very large area of land within a predetermined planting period. If this method is well supervised, it will give an excellent result. However, if it is poorly supervised, the reverse will be the case.