

Cultural Management of *CORN*

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INTRODUCTION

Corn ranks second to rice, not only in terms of area devoted to its production but it has been a staple food of about 20% of the total population of the Filipinos.

Aside from this, the green corn, boiled or roasted, is a popular snack food & may also be cooked as vegetable or soup. Other by-products of corn include corn flour and syrup, sugar and oil. In terms of nutritive value corn is a richer source of vitamin A than polished rice. It contains high amounts of mineral such as calcium and phosphorous. Moreover, it is also a source of starch derivatives for oil, fibers and other industrial uses.

Corn has also been used as an important ingredient in animal feeds.

Corn may be planted anytime of the year provided there is adequate soil moisture., However, it is best to plant from May to June during the wet season and from October to November during the dry season.

CULTURAL MANAGEMENT OF CORN

Seed Selection

Select varieties that are high yielding, early maturing, tolerant to pests and diseases, and adopted to the climatic conditions of the area.

Weeds can also be eliminated by cultivation before planting. Remove weed seeds before they produce seeds to reduce sources of weeds seeds in the succeeding cropping season.

Chemical Control

This can be employed through the use of selective and non-selective herbicides. Non-selective herbicides kill all vegetation they may come in contact with. Apply this kind of herbicides before crop emergence or immediately after planting or spraying between planted furrows.

Pre-emergence herbicides are effective against grasses and to some extent sedges and broad leaf weeds. However, it is not advisable to walk or roam around the sprayed area because weeds will grow on the footprints.

Apply post-emergence herbicides when both the crop and weeds have already emerged.

Otherwise, use 4 bags of complete fertilizer (14-14-14) per hectare as basal application in the furrows & cover the fertilizer with a thin layer soil, about 2 cm thick. After 25-30 days of planting, side dress with bags of ammonium sulfate or 2 bags of urea. Cover the fertilizer immediately by shallow hilling-up.

During wet season, split application of nitrogen (N) fertilizer is recommended. Apply all the needed phosphorous and potassium and half of the recommended amount of N in the furrows before planting. Side dress the other half of N at least 4-5 cm away from the base of the plant 20-24 days after emergence or immediately before hilling-up when there is a right soil moisture. To attain higher yields, apply animal manures and crop residues just before land preparation.

Due to the possibility of drought during the dry season, apply all the recommended amount of fertilizer in the furrows just before planting to provide all the needed nutrients to the plants. However, if supplemental irrigation is available, follow the application of fertilizer for the wet season. Cover the fertilizer with 2-4 cm soil to prevent seed injury. Organic fertilizer or compost may be applied in addition to the recommended inorganic fertilizer.

Planting

To attain an optimum plant population density of 50,000-60,000, about 16-18 kg of hybrid seeds or 18-20 kg Open Pollinated Variety seeds per hectare are needed. Space the furrows with 75 cm interval. Plant seeds about

3-5 cm deep when the soil moisture is just right for planting, then cover the seeds with soil.

Thin seedlings to one plant per hill about 7 –10 days after emergence.

Success in corn production depends on proper care and maintenance of the crop throughout its life cycle. (Refer to the Management Guide for the Various Growth Stages of the Corn Plant).

Cultivation

Cultivation improves soil tilts and control weeds. Off-bar between furrows to aerate medium-textured or heavy soils 22-25 days after planting. Hilling-up 27-30 days after planting or just after side dressing the remaining recommended amount of nitrogen.

If the field is weedy, use an inter-row cultivator (paragut) or employ line weeding.

Water Management

Insufficient or excessive soil moisture is a limiting factor in corn production. Excess in the root zone within 36 hours injures the plants.

Insufficient soil moisture during the reproductive stage decreases yield from 20-30 per cent. When there is no adequate moisture during tasseling stage, irrigate the cornfield by “flush irrigation” if available.

Overhead or sprinkler irrigation may also be used in elevated or sandy loam soil. In flat rolling furrow irrigation is advisable.

Weed Management

To optimize yield during the critical period- at 28-35 days after planting, weeds should be removed. After this period, weeds may no longer reduce crop yield significantly.

Weeds can be effectively controlled by a combination of two or more practices. It depends on weeds species present, availability and comparative cost of control to be employed.

Some of the common weed controls are:

Physical Control

Thorough land preparation

(Off-barring 17-22 days after planting can control weeds and loosen the soil. Hilling up to 25 to 30 days after planting also reduce weed population).

Inter-row cultivation or Hand weeding (or line weeding is recommended if necessary) or a combination of any of these.

Some parameters of a good seed:

- ✓ *High purity in terms of cultivars & species*
 - ✓ *High viability or high percentage of germination*

 - ✓ *High-vigor-vigorous under wide condition*
 - ✓ *Non-lodging*
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Land preparation

Prepare a well-pulverized field for uniform germination and good root development. Plow at a depth of 15-20 cm. when soil moisture is right. That is, when the soil particles 15 cm below the surface separate & only thin portion sticks to the finger but no ball is formed. Harrow twice with 2-3 passing to break the clods.

If a disc plow is used, plow under corn stubbles at a depth of 18-20 cm. The use of disc plow enables a farmer to utilize corn stubbles as additional source of fertilizer. Clayey & weedy fields require two or more plowings and several harrowing.

Fertilizer Application

The rate of fertilizer should be based on the results of soil nutrient analysis. Soil samples may be submitted at the Municipal Agriculturist Office in the area or at the regional soils laboratory. Negotiate with the agricultural technologist in the area to determine the general fertilizer recommendation.