

# MAIZE

Corn, Indian Corn, Sweet Corn

*Zea mays*

Gramineae

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## ECHO® PLANT INFORMATION SHEET

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### Origin

Cultivation of corn was known in portions of Mexico and Central America in Pre-Columbian times. Corn use has spread to many other temperate, subtropical, and tropical regions of the globe where it is known as Maize. Among the cereal grains, Maize production worldwide is surpassed only by rice and wheat.

### Uses

Most of the Maize produced in the West is fed to animals, whereas most Maize produced in Asia, Africa and Latin America is used as food. Maize is marketed raw on the cob, frozen or canned, rolled and roasted corn flakes as cereal, corn oil for salads and cooking or ethanol as fuel. Maize is also an important feed source for poultry, swine and cattle. The whole plant is used as green fodder or as silage for cattle. Possible uses of corn stover (stalks, leaves and husks) as a source of fuels and other processed products are being explored. Ground cobs may be used as litter material for animal bedding.

### Common Names

- French
  - maïs
- Spanish
  - Maíz
- Hindi
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- Malay
  - jagong

### Cultivation

Maize is a warm climate crop, thriving in open sunny environments having daytime temperatures of 20-24° C (68-86° F). Rainfall during the growth period should be 500 mm (20 in) or more. The periods of tassel and silk formation are especially sensitive to moisture stress. Maize often is interplanted with vine crops to retard weed growth. Maize normally is dibbled or sown in rows by mechanical planters at the beginning of the rainy season. In dry regions, maize frequently is planted in furrows to promote rooting closer to subsurface moisture zones. Maize plants require large amounts of nutrients, especially nitrogen, phosphorus and potassium. Nitrogen deficiency stunts growth and results in low yields. The application of animal manures and the practice of rotating corn with nitrogen-fixing legume crops help correct the soil nitrogen depletion so common in Maize fields.

### Harvesting and Seed Production

Maize ears may be harvested for seed after the kernels have sufficiently dried to store without spoilage. Hybrid corn varieties are not productive seed sources; these varieties must be purchased from seed companies each year. Open-pollinated Maize varieties may be replanted. Thirty to 50 ears within the Maize-field should be picked from plants possessing desirable features. Avoid plants near the borders, as these plants likely have been pollinated by wind-borne pollen from other varieties growing nearby. The shelled seed kernels should be mixed thoroughly prior to planting to reduce inbreeding.

### Pests and Diseases

Diseases of Maize include leaf blight, leaf rusts, smuts, and root, stem and ear rots. Root rots tend to occur in compacted and poorly-drained soils. Some guidelines for disease prevention are: use healthy, treated seeds, use clean cultivation (plow crop residues under), correct soil potassium deficiencies to improve plant disease resistance; and practice crop rotation. Insect pests of maize include European corn borer, rootworms, stem-borers, aphids, grasshoppers and leafhoppers.

### Cooking and Nutrition

Maize is a rich carbohydrate food source. The immature kernels are consumed raw, cooked, or roasted. Maize grains are pounded or ground as meal or flour to be used in baking or as cooked cereal. Maize kernels often are soaked prior to grinding, and after fermentation are used to prepare dishes such as Kenkey or Pozol. Corn starch is used as a thickening agent. Young tassels may be boiled and eaten and the pollen used as a soup ingredient. Maize grains contain about 10% protein though selected varieties contain up to 20% protein. A deficiency of lysine in Maize may lead to protein malnutrition if it is used exclusively as a staple in human or animal diets. Hi-lysine Maize has been produced through genetic selection to correct this deficiency.

## References

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