Growing

SWEET CORN

in hawaii

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About the Author

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Foreword

There are two types of corn commonly grown in Hawaii—field corn, a starchy type which is grown for animal feed, and the sweet corn grown for the dinner table.

Varieties

The sweet corn varieties suitable for Hawaiian conditions are:

1. Hawaii Sugar, a yellow sweet corn developed by the Hawaii Sugar Planters' Association.
2. USDA-34, a white sweet corn developed by the USDA.
3. Pajimaca, a large white sweet corn from Cuba.

These three varieties are resistant to the corn mosaic, a virus disease which makes the growing of the mosaic-susceptible bantam corns very difficult in most areas in Hawaii.

In the cooler, higher elevations, such as, Kula, Maui, and Kamuela, Hawaii, the Golden Cross bantam and other bantam corns can be grown satisfactorily because of their relative freedom from the corn mosaic disease. These bantam corns are not as tight-husked as the locally adapted varieties with the result that the corn earworm damage to them often gets very serious if effective control measures are not taken.

Soil Type And Time Of Planting

The corn is adapted to any type of soil that has good drainage and is fairly fertile. It can be planted the year round in Hawaii.

Planting

The seeds should be planted in pairs at a depth of ½- to ¾-inch, and spaced 15 inches apart in the rows, with the rows spaced 2½ feet apart.

In very windy areas, the planting should be made in the form of a square, or, if this is impractical, the rows should start or end facing the direction of the prevailing wind. This point is important since corn is wind pollinated and if the wind blows most of the pollen off the tassel and away from the silk of the ears, the grains on the ear will develop only in spots.

Another point to remember in planting corn is to be sure that only one variety be planted at any one time if seeds are to be saved from the crop. This planting must also be at least ¼ mile away from any other corn variety planting to the leeward, and at least ½-mile away from any other corn variety plantings to the windward side, to avoid cross pollination.

The contamination of a sweet corn variety planted for seed is easily detected upon the maturity and drying of the kernels if the contamination is from a variety that has a different kernel color or from a field corn variety. The contamination will appear as off-colored kernels or smooth and dented kernels (sweet corn kernels are shrivelled and not dented at the tips). Contamination of sweet corn ears by field corn pollen will also affect the eating quality of the developing ears.

Fertilizer Application

The corn needs "relatively large" amounts of fertilizer for its best growth and yield. On soils of average fertility, 8-10-8 or 8-12.5-6 fertilizer, applied at the rate of about 750–1,000 pounds per acre, is needed. One-half of the required amount of fertilizer should be applied at the time of planting. It should be placed 2 inches to the side of the seeds and 1 inch below, in two bands about 3–4 inches long on both sides of the seed row. The second half of the fertilizer should be applied a month later. If any manure is available, it should be worked into the soil before planting.

Irrigation And Cultivation

The crop should be irrigated whenever necessary and the weeds should be controlled, especially when the corn is young. The Dinitro compounds, Preemerge and Dow General, at 1–100 in water and Pentachlorophenol, and oil at 1–25 in water, can be used as pre-emergence sprays to control weeds in corn.

Suckering

On the bantam and hybrid types of corn, which usually send out suckers from the base of the plants, the first suckers should be removed.

Insect Control

The corn leafhopper and the corn earworm are the most common insect pests on corn. The Chinese rose beetle may become troublesome in some areas by eating holes in the leaves. The leafhoppers can be found between the leaf and the stalk. They feed by sucking on the plant, causing dried-out patches on the base of the leaves. The leafhoppers are easily controlled with a DDT spray. Spraying is much more effective than dusting. A spray made up of 2 pounds of 50 percent DDT in 100 gallons of water (1 level tablespoonful of 50% DDT in 1 gallon of water) will control this pest.

The corn earworm feeds on the kernels of the corn. The adult moth lays its eggs on the corn silk or on the husk as soon as the silk appears. The eggs are semi-spherical, cream-colored, and about the size of a small pin head. The eggs hatch and the tiny worms work their way into the ear through the silks and feed in the interior. These worms can be controlled by spraying (2 pounds 50 percent WP in 100 gallons of water or dusting (5% dust) with DDT as soon as the eggs are found on the silk. Four treatments at four day intervals will usually give fairly satisfactory control of the earworms.

The rose beetles feed at night and hide in the soil during the day. They can be controlled also with DDT sprays or dusts.

Diseases

The corn is relatively free from disease infestations.

Corn mosaic, a virus, is the most serious disease of corn if the non-resistant bantam and hybrid varieties are grown. There is no control for this disease aside from the control of the leafhoppers which transmit the disease and the planting of resistant varieties, such as Hawaiian Sugar, USDA-34, or the Pajimaca.

The corn leaf spot and smut may infest occasional plantings. The leaf spot can be controlled with a fungicidal spray such as Zineb or Captan applied once in two weeks. *Caution:* Copper fungicides may cause severe foliage damage. The corn smut damage is usually negligible, however, and does not ordinarily warrant chemical spray control measures.

Damping-off

Occasionally the planted seeds may rot and fail to grow because of the attack of certain soil-borne disease organisms called damping-off organisms.

Where such organisms appear to be present, the seeds should be treated with a seed distinfectant such as Arasan before planting.

Corn is resistant to the rootknot nematode and is therefore an excellent crop to rotate with other crops, most of which are susceptible to it.

When applying insecticides and fungicides, read the labels carefully and follow directions accurately. Do not use chemicals which are not registered for corn. Apply the chemicals only in the amounts specified and at the times called for.

If the instructions require two pounds in 100 gallons of water per acre, for instance, use this amount and no more. If a period of 14 days is required between

last spraying and harvest, do not harvest in a lesser number of days.

By following these instructions you will be able to stay within the residue tolerance limit set up under regulations of the Pure Food and Drug Act.

Harvest

The sweet corn varieties, including Hawaiian Sugar, USDA-34, and Pajimaca, will be ready for harvest in ten to 12 weeks after planting. The bantam and hybrid corns mature slightly earlier and will be ready for harvest in eight to ten weeks.

The ears should be harvested at the proper stage of maturity for their best eating quality. Immature or overmature ears will lower the quality of the corn.

To determine the proper stage at which to harvest the corn, by feeling or looking at the ears, is a difficult task for the uninitiated, however. Here's how: peel the husk off a few ears and press the kernels with the thumbnail. If the kernels burst open with force, it is in the right stage (called the milky stage) for harvest. On overmature corn, the kernels will not burst open with any great force. Another test for right stage is to examine the softness of the tips of the ear. Finally, note that mature corn will show dried silk and the tip of the ear will be solid to the touch.

The ears should be harvested within a span of a week once the harvest begins, for otherwise the ears will become overmature. In the bantam and the hybrid varieties, the span of harvest may only last two or three days.

Care After Harvest

Corn is one of the most perishable crops, so it should be treated and handled properly. Otherwise, you may lose taste, and accordingly, market quality. You may have bought some sweet corn on the local market, for instance, which didn't taste sweet at all. That is very often true with the corn you find in local stores.

A big reason for corn not tasting sweet, even when it is of a sweet corn variety, is because the sugars in the kernel have turned to starch. This conversion takes place rapidly in the kernels once the ears are harvested if they are not refrigerated. A difference of two hours from harvest to refrigeration will greatly lower the quality of corn.

You get the best tasting corn by harvesting at the right stage, and chilling immediately for storage, or by cooking the corn immediately after removing it from the field.

References:

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