Grow *Worm-Free* Sweet Corn

By Controlling Pesky Earworm

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Application of insecticide dust to silks with a stencil brush for earworm control.

In the past Arizona has grown only a limited acreage of sweet corn for local consumption. An important limiting factor has been the damaging and unsightly kernel injury produced by the corn earworm. Recent experiment station tests have shown that this pest may be effectively and profitably controlled.

With the earworm control methods now available it should be possible for Arizona farmers to grow considerably greater acreages of sweet corn for profitable sale in expanding local markets. There appears to be a sizable local demand, as yet unfilled, for tender, freshly-harvested, worm-free sweet corn of the high quality available in recently-introduced hybrid varieties.

The corn earworm is also a serious pest of cotton (where it is known as the bollworm), and of tomatoes, seed alfalfa, sorghum, lettuce and beans. On sweet corn the adult earworm moth lays its eggs singly on the moist, newly-exposed silks, which are particularly preferred for oviposition. As the silks continue to grow outward from the developing ear additional new and attractive surfaces are exposed for egg laying over an extended period.

Timing Important

Earworm control requires properly-timed insecticide application to these surfaces to kill the newly-hatched larvae. When the earworms have passed downward into the area of the developing kernels they are beyond the reach of any known and practical control method.

Because of this situation a series of from four to five applications of an insecticide to the moist silks at the tips of the developing ears, made successively at three-day intervals, are usually needed for the adequate control of the newly-hatched earworms. If all silks do not appear within a relatively short period, as in the case of an uneven stand or in unusually cool weather, further insecticide applications may be needed.

DDT Best

A 5-percent DDT dust is a particularly satisfactory insecticide. Although DDT may be applied to sweet corn in several ways, the most practical and effective method known at present involves hand-operated equipment, using either an ordinary two-inch stencil brush or a bellows-type knapsack duster.

The stencil brush method, which was first developed in California, involves a minimum of equipment. The dust is carried in a wide-mouth tin can, of approximately one gallon capacity, hung at the waist of the operator. Three taps of the dust-laden brush to each ear are sufficient to insure adequate coverage of the silks. The brush is dipped once in the insecticide for each ear. This appears at first to be an odd and laborious method of insect control although, in practice, it can be rapid, effective, and economically profitable.

In using a bellows-type knapsack duster, it is important that the dust be applied with the proper direction and force to insure thorough coverage of the silks. Both methods of application were effective in 1953.

In several commercial operations in the Phoenix and Yuma areas growers have produced profitable crops of sweet corn by controlling earworms with DDT dust. Chemical analyses made in other states have shown no insecticide residues to be present on the edible portions of ears dusted.

Various types of mechanical equipment, including aircraft, have been used elsewhere in earworm control experiments although in general the results have been less satisfactory than where insecticides have been applied with hand-operated equipment. The proper timing of insecticide applications and the continuous protection of the fresh silks from newly-hatched earworms become more difficult on freshly-irrigated land when heavy mechanical equipment is used.

The positive and effective results following applications of 5 percent DDT dust, using either a stencil brush or a bellows-type duster, have justified the labor cost involved.

Treating corn silks with knapsack duster for earworm control.