

Connecticut Agricultural Experiment Station  
New Haven

## Control of European Corn Borers On Dahlias

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**T**HE EUROPEAN CORN BORER (*Pyrausta nubilalis* Hubn.) has become a serious pest of dahlias in Connecticut. Larvae of the second generation infest the plants during August and September, causing breakage of the branches and the main stem, thus preventing formation of blossoms. In some cases the infestation has been so heavy that no normal blossoms developed.

### Life History

The larvae of the corn borer hibernate in infested cornstalks, dahlias, potatoes, weeds and other host plants. Late in May they pupate, and the moths begin to appear early in June. Eggs are deposited on corn, potatoes, beets, rhubarb and weeds. The larvae go through the usual feeding period and complete their growth late in July. Unlike the overwintering generation they pupate immediately, emerging as moths during August.

These moths deposit the second generation eggs on a variety of plants, including dahlias. The eggs are laid in masses and are usually placed on the undersides of the lower leaves. The larvae hatch, crawl up the plant, and enter the clusters of buds and small leaves at the tips of both main and branch shoots. They tunnel down through the growing shoot, weakening the stem so that it breaks. If many larvae are present, growth may be stopped and the plant stunted. As the larvae develop, they may leave the infested shoot, migrate, and re-enter the plant.

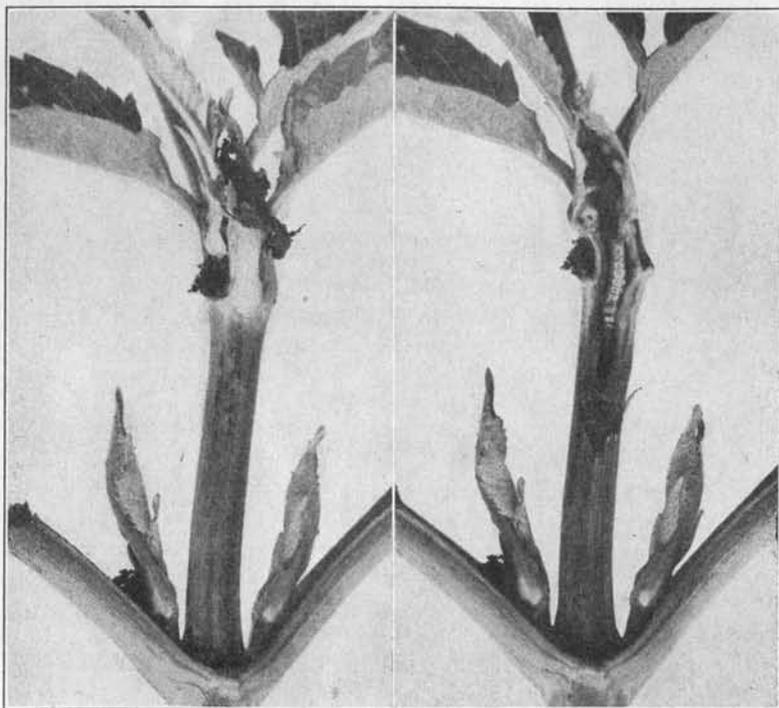
The infestation is noticed first about the middle of August as small spots of dead tissue in the buds and groups of very small leaves. The larvae feed between these leaves and may be found readily at this time.

Observations have indicated that all varieties are susceptible to damage, but under actual field conditions the more rapidly growing plants are usually most heavily infested. Pompons, miniatures, single and decorative types have been badly injured.

### Control Measures

Destruction of infested stalks by burning in late fall or early spring reduces the population of borers. However, the corn borer is prolific and since it completes one generation every year before infesting dahlias, as pointed out under life history, these plants are likely to be heavily infested in spite of a thorough clean-up.

Removal of infested buds in disbudding and of infested shoots in pruning is of some value, especially in light infestations, but does not prevent serious damage in heavy infestations.



Dahlia shoot injured by European corn borer. At right, stem cut open to show borer.

The materials and methods developed by the United States Bureau of Entomology and Plant Quarantine, Division of Cereal and Forage Insect Investigations, were applied to dahlias at the Station farm at Mount Carmel in 1936 and 1937. None of them completely prevented infestation, but each killed enough borers to allow the plants to blossom normally. Derris dust, dual-fixed nicotine dust and a spray containing pure ground derris or cubé root were effective materials and all of them are available at reasonable prices.

### Preparation of the Spray

To 1 pound of pure ground derris or cubé root containing at least 4.0 percent rotenone, is added *one* of the following spreaders: *Areskap*, 1.5 ounces (avoirdupois); *Ultravet*, 2.0 ounces (avoirdupois); or *Grasselli Spreader-Sticker*, 1.5 liquid ounces. The derris or cubé and spreader are mixed thoroughly, and enough water is added to make a thin paste. One pound of derris or cubé is sufficient for 25 gallons of water. For small amounts 2 level tablespoonfuls may be diluted in 1 gallon of water.

Several concerns are selling the derris or cubé powder mixed with spreaders and ready for use.

### Dusts

Rotenone dust (derris, cubé or timbo roots diluted with talc or clay) containing 1 percent rotenone is available ready for use. This dust has been very satisfactory on dahlias but has not been effective in controlling the European corn borer in sweet corn.

Dual-fixed nicotine dust containing 4 percent nicotine is manufactured ready for use. *This dust is not the same nicotine dust that has been used for control of aphids.*

### Method of Application

Sprays may be applied with any type of small sprayer. The spray mixture may be prepared in a barrel and poured through a fine screen to remove large particles which might clog nozzles. The material should be applied to the tips of the growing shoots of both main stems and side branches. It should control aphids and thrips as well as corn borers. For thrips control, it should be applied to the undersides of the leaves.

Dusts may be applied with any hand duster and should be directed at the tips of all growing shoots.

### Dates of Application

In 1936 the first treatment was applied on August 10, and in 1937 on August 2. It is suggested that the first application be made about August 5, with weekly applications until the middle of September. Applications made at intervals of five days rather than one week are somewhat more effective and may be preferred by growers.