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EC1555 Revised 1951 European Corn Borer Control in Nebraska

Robert Helm

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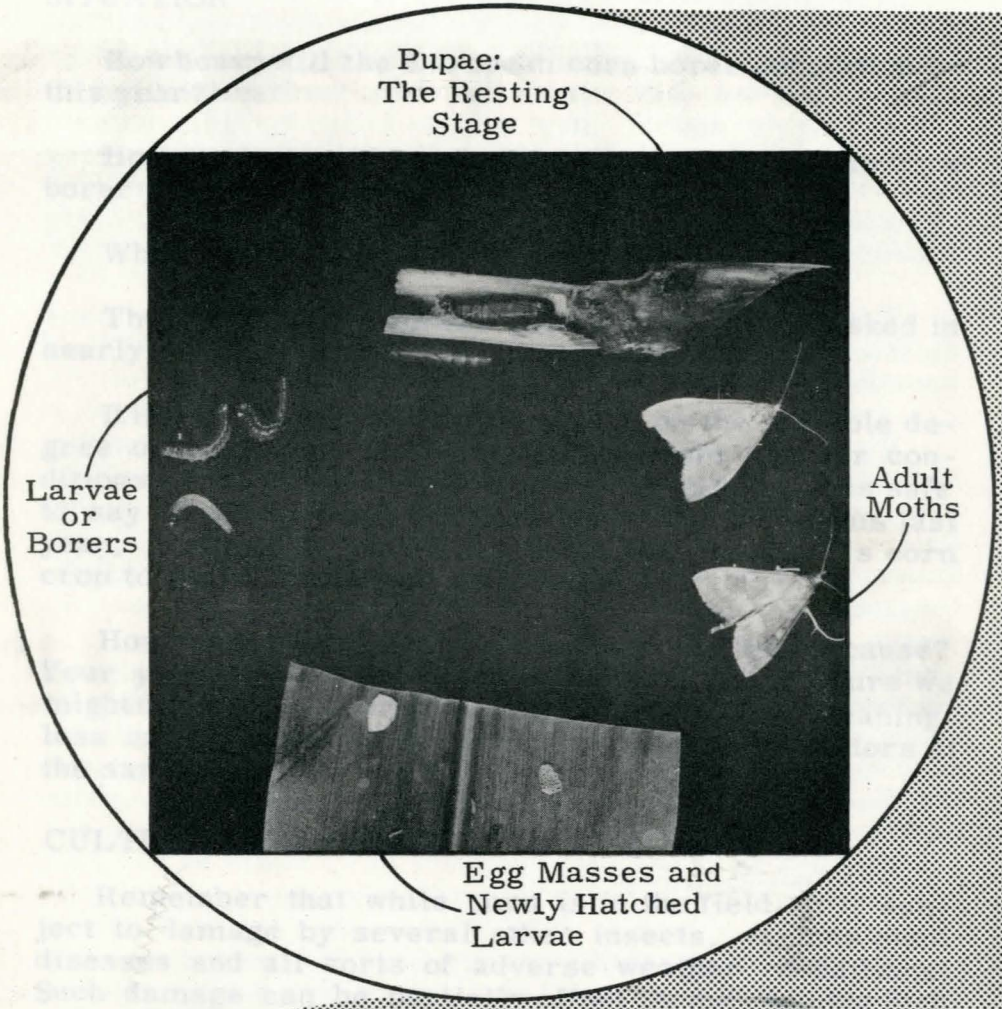
European Corn Borer Control IN NEBRASKA



EXTENSION SERVICE
UNIVERSITY OF NEBRASKA COLLEGE OF AGRICULTURE
AND U. S. DEPARTMENT OF AGRICULTURE
COOPERATING
W. V. LAMBERT, DIRECTOR

EUROPEAN CORN BORER CONTROL

IN NEBRASKA

Robert W. Helm
Extension Entomologist

SITUATION

How heavy will the European corn borer population be this year?

How much actual crop damage can we attribute to corn borer infestation?

What can we do to control this pest?

These and many similar questions are being asked in nearly every corn growing county in Nebraska.

It is difficult to answer the question on the possible degree of infestation because unpredictable weather conditions can alter the situation from day to day. It is safe to say that wherever the corn borer was numerous last year, precautions should be taken with this year's corn crop to guard it as much as possible.

How much actual damage does the corn borer cause? Your yield depends upon many factors. Any figure we might offer on corn borer damage alone would be meaningless unless you consider all of the other yield factors at the same time.

CULTURAL CONTROL

Remember that while corn is in the field, it is subject to damage by several other insects, various plant diseases and all sorts of adverse weather conditions. Such damage can be partially offset by maintaining high soil fertility, careful selection of hybrids, and proper cultural practices.

From a practical standpoint, it is just as important that you make every attempt to obtain a good yield in spite of these insects, diseases and weather factors, as it is to apply direct control measures when your corn is threatened.

If you plow five to six inches deep and thoroughly cover all old stalks and trash sometime before planting, you will cause many of the borers to come to the surface of the ground. When they reach the clean surface and find no trash to hide under, they will be killed by their natural enemies. Surface planting of the corn will aid in keeping the old stalks and trash buried. Listing will tend to return the trash and stalks to the surface. This will again provide suitable living quarters for the corn borers.

If you select a hybrid that yields well and has strong stalks and earshanks, the borers can do a great deal of tunneling without noticeably decreasing the yield.

If you plant your corn at about the middle of the planting season for your area, the plants will not be large enough to attract the first-generation corn borer moth at egg-laying time. The second-generation corn borer moth will also look elsewhere to lay her eggs, because your corn will be too mature when her egg-laying time approaches.

Low soil fertility makes corn more liable to corn borer damage. Proper attention to the fertility of your soil, particularly the available nitrogen supply, will make your corn more vigorous and better able to withstand corn borer attack. Your county agent can advise you and he also has useful circulars on soil fertility practices.

Shredding stalks for fodder will kill many corn borers.

If you cut stalks within two inches of the ground and use them for ensilage, all the borers that go through the fermentation process will be killed.

CHEMICAL CONTROL

In certain areas of the state, such as the nine northeastern counties, individual fields of corn can be protected and losses reduced by the proper use of insecticides. Remember that the profit realized from chemical controls should justify the expense of application. Otherwise you waste both time and money.

Instructions for chemical control are complicated. Your success will depend largely on proper timing. The corn borers remain out in the open on the corn for only a short time. After they have entered the stalk, no chemical can reach them.

DDT and Ryania are the two materials that have given the most satisfactory results.

HOW TO DECIDE IF THE USE OF AN INSECTICIDE WILL BE PROFITABLE

Inspect your crop closely when it is about waist high (35 inches extended leaf height), or about three weeks before tasseling time.

Choose 50 to 100 stalks at random and count the number of European corn borer egg masses on the leaves. You will usually find them on the lower surface. (See picture of egg masses on cover.) If you find 50 or more egg masses for every 100 stalks, then chemical treatment should pay.

If the egg mass count indicates that a very heavy infestation can be expected, it would be wise to plan two treatments, the first one within a week after first hatch and the second application 7 to 10 days later. This will assure you of better control over a longer hatching period. Lighter infestations can be reduced effectively by a single application made 10 to 12 days after the first egg hatch.

If you decide to spray with DDT, it should be applied so that every acre gets 1 1/2 pounds of the actual insecticide. The amount of water you should use in your mixed spray will depend entirely upon the type of equipment you are using. The following table will serve as a guide.

Insecticide	Equipment	Application rate of mixed spray per acre per application (Gallons)
DDT emulsion concentrates	Ground	5 to 50
DDT wettable powders	Ground	Not less than 15
DDT emulsion concentrates	Aircraft	2 to 5

If you decide to dust with either DDT or Ryania, apply the dust so that each acre gets 2 pounds of actual DDT or 12 to 16 pounds of actual Ryania. The amount of mixed dust you should use will depend on the percentage of insecticide in the preparation you purchase. The following table will serve as a guide.

Insecticide	Application rate of mixed dust per acre per application (Pounds)
DDT, 10%	20
DDT, 5%	40
Ryania, 40%	30-40