NOW WE HAVE CORN BORERS

Changes Now Are Not Suggested on Those Farms Having Borers

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making any changes in their farming practices. When the borers begin to cause damage, recommendations will be made for control.

The nearest to Iowa that any commercial damage has been done is in the west side of Kankakee County, Illinois, which is about 150 miles east of Iowa.

Except for the infestation in sweet corn, the farmers in the five most heavily infested counties of Illinois last year were largely unaware of corn borer damage. The loss in yield of field corn in these five counties in 1942 is estimated at about 1 bushel an acre by Professor W. P. Flint of the Illinois Station. A loss of one bushel an acre is largely unnoticed.

Left: Borers work in all parts of the cornstalk. In this case one has worked through a kernel and into the cob.

Below: Borer tunnels in a stalk from a Clinton County, Iowa, field in 1942.

Our observation of the increase and spread of the borer in Ohio, Indiana and Illinois, where conditions seem most like those in Iowa, indicates that the weather will mostly answer this question of "how soon."

Last year conditions were excellent for corn and apparently just right for the borer. In fact, the last 3 or 4 years, which have been exceptionally good corn years, have also been exceptionally good for the borers. So the weather that favors corn most also seems to favor borers most.

For the present time we feel that there is no need of Iowa farmers
It may interest Iowa farmers to know that Flint estimates the Illinois borer population in 1942 increased from 200 or 300 percent to well over 1,000 percent—and 1,000 percent means 10 borers in 1942 where there was one the year before.

New Borer Strain

A new problem is now to be contended with. When the corn borer first began damaging corn in Michigan, Ohio, Canada and other areas, there was only one generation in a season, but now a multiple-generation strain has put in its appearance. Illinois entomologists reported 75 to 80 percent of the borers completed two generations in 1942.

Most of the experimental work with the control of European corn borer in the Lake Erie region has been done with the single-generation strain. Now we are confronted with this multiple-generation strain, and control measures must be worked out to cope with it.

Natural spread by flight may be expected until the insect has spread clear across Iowa. But enough research work and experience in control have been gained with the borer so that we can feel certain Iowa, Illinois, Missouri and other Corn Belt states will still be able to grow corn profitably despite the corn borer.

Experience in the infested states shows that it takes from a few to several years after the borer has become established in a new area for it to build up a large enough population to cause serious losses.

J. J. Davis of the Indiana Station reports that of the 62 counties surveyed during the past 2 years, the average number of borers per 100 plants was about 35 in 1941 and 193 in 1942. He gives the dollar losses in Indiana from corn borer as $650,000 in 1940, $1,236,255 in 1941 and the estimate for 1942 is placed at $4,000,000. Some fields of early sweet corn in both Indiana and Ohio were completely ruined by borers.

The corn borer was first found in Ohio and Michigan in 1920, in Indiana in 1926, in Illinois in 1939 and in Iowa and Missouri in 1942. Although the corn borer was first found in Indiana in 1926, no commercial losses occurred until 1939—13 years later. The weather was abnormally dry and unfavorable to borer development during a number of years in that period, which may account in part for the long period it took to build up a serious population of the pest.

Another factor besides the weather which aided the Indiana farmers but doesn’t look so promising to us in Iowa is that there was only one brood of the borer during most of that period. Now with a borer strain producing two generations in a season, population may build up much faster.

Although farmers of Indiana, Ohio and other states with borers in their fields have had some losses, still they are growing corn successfully and are obtaining good yields. The amount of control which they have practiced has varied from season to season and from one region to another. In areas where little damage has been done commercially, control efforts have been slight.

Control Measures

In areas of heavy infestation it has been found that no single practice will control the borer, and corn growers there are urged to adopt as many of the control measures as possible and to cooperate with their neighbors in control, for much more can be accomplished in this way.

Here are a few of the important suggestions and recommendations for corn borer control in the Great Lakes states:

1. Destroy the overwintering borers in the field before the moths emerge by shredding or ensiling the corn, feeding corn fodder in barnyards and then raking up the stalks in the spring and burning them or plowing them under; completely plow under all stalks and stubble in the fall or early spring.

2. Avoid planting corn too early on fertile soil because the one-generation strain of moth prefers the tall and most vigorous corn for egg laying. Where the two-generation strain is dominant, late corn may also be heavily infested with the second brood. (We have something to learn about that.)

3. Plant resistant or tolerant strains of corn. No immune strains are known, but some hybrids seem to be a lot more tolerant or resistant than others. (The Iowa Station has been sending its hybrids into the borer-infested states for testing so a good deal already is known about the resistance of our various ones.)

4. Changes in cropping practices and rotations in areas where severe damage has occurred are sometimes necessary. In Iowa it probably will mean, for example, that for oats in the spring, we shall no longer be able to disk the corn field and sow the oats. Instead, we may have to plow the stalks under.

5. Dusting or spraying to control the borer is too expensive except for early sweet corn for the early market.

These control measures are only possibilities for the future in Iowa. We are not ready for any of them yet. When the time comes, the Extension Service of Iowa State College will bring to you the best available knowledge on control. In the meantime, the Iowa Station will be finding out all that is possible about the best control measures for Iowa.

An example of the Iowa Station work is that for several years a part of the Iowa corn breeding program has included the testing of many hybrids for borer resistance. These tests, of course, have been conducted in the heavily infested territory cooperatively with other state and federal workers.

An orderly, coordinated and harmonized program of research, extension, regulatory and action programs is now being developed to deal with the corn borer in Iowa. This program will involve the Agricultural Experiment Station and Extension Service of Iowa State College, the Iowa Department of Agriculture as well as other state and federal agencies.

The Iowa program for 1943 will include such work as scouting to determine the rate of borer increase and spread, the proportion between one and multiple-generation strains, life cycle and seasonal history and the location of counties most favorable to borer increase; the breeding and testing of corn for borer resistance, the introduction of parasites and diseases which attack borers and the study of clean culture methods and various other farm practices of Illinois, Indiana and other states.

We are recommending no changes now in Iowa's corn growing practices, but we want to be ready with sound recommendations if and when the European corn borer does begin to cause serious losses in Iowa.