Corn-Borer Developments During 1929

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The known spread of the corn borer in 1929 was about the average for the past five years. The insect was found within 15 miles of Illinois. Damage in the midwest area was very slight, and definite progress was made in the development of control measures.

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No outstanding developments have taken place in the corn-borer situation during 1929. The borer has advanced into new territory at about the normal rate and is now known to be within about fifteen miles of the eastern edge of Will and Kankakee counties. No infestation was actually found in Illinois during the past year, but with known infestation only fifteen miles away it seems probable that if every cornstalk in the fields along the east side of the state could be examined, some corn borers would be found.

The insect progressed southward in Indiana and Ohio for fifty to seventy-five miles. For the second time infestations were found in Oldham county, Kentucky, and a considerable extension occurred southward in West Virginia.

Damage Not Extensive in Midwestern Area

As was the case in 1928, commercial damage by the corn borer in the midwestern area during the last season was limited to comparatively few fields in northern Ohio and southeastern Michigan. While the insect has been present in Indiana for four years and the infested area now extends practically across the northern one-fourth of the state, no commercial damage to corn has occurred in that state, and under present conditions it may be two or three years before such damage does occur.

Tests to Find Resistant Corn Varieties Continued

The work to develop better methods of control was carried out by the Bureaus of Entomology and Plant Industry of the U. S. Department of Agriculture, by the Illinois Agricultural Experiment Station, and by the State Natural History Survey, in a more intensive manner than in 1928. Twenty-four of the more promising varieties and strains of Illinois corn which were tested last year were again grown in the area of heaviest infestation in Ohio. These were compared with an Ohio strain of Clarage as a check in yielding ability and in percentage of infestation. Plantings were made at two dates, May 10 and May 25, and the plots of most varieties were replicated three times.

Altho the yields of grain were not so high as last year by about 35 percent, comparative yields were similar to those of 1928. The high-yielding strains of 1928 were again at or near the top in yield. The two different planting dates, however, gave very little difference in yields. Immediately following the first planting, weather prevailing in the area was such as to greatly retard germination and early growth. So unfavorable were conditions that only an occasional seedling from the first planting had emerged at the time of the second planting 15 days later.
Some Superior Strains Show Marked Resistance

One of the outstanding features of the tests manifested again this year was the wide variation in percentage of corn-borer infestation of the different varieties. The strain with the lowest average infestation had only 6 percent of the plants infested, and the variety with the highest infestation had borers in 58.6 percent of the stalks. Last year the same two varieties showed 9.8 and 62.6 percent of infestation respectively.

In general, varieties that are low growing, and therefore comparatively low yielding, showed low infestation. A few high-yielding strains, however, in both the 1928 tests and the 1929 tests showed fairly low infestation. It is the discovery of these few superior producing strains which possess marked resistance to the borer that determines the success of this phase of the corn-borer investigations. Consistent and distinct progress has been made.

Expensive Machinery Not Needed

Further coverage studies made during the past year tend to strengthen the belief that it will be possible for farmers to keep the borer reasonably well in check without greatly increasing their investment in machinery. Altho the larger sizes of plow bottoms are likely to give slightly better coverage, the addition of inexpensive equipment—larger coulters, jointers, and covering wires— to plows now owned and the proper operation of these plows should in most cases make it possible to meet control requirements satisfactorily. On the other hand, it is to be questioned whether plow manufacturers are in all cases making the alterations that are necessary in order to enable the users to secure more easily complete coverage of corn debris.
Some previous treatment of stalks that will lay them flat on the ground and keep them there until the ground is plowed appears to aid considerably in securing good coverage, especially with the smaller sizes of moldboards and the pulverizing type of plow. Raking and burning the cornstalks will naturally make good coverage easier, but in most cases very good results can be secured merely by laying the stalks flat and then plowing them under. The type of burning now done by the average farmer, however, by no means insures satisfactory coverage. Where crops such as oats are to be seeded without plowing the ground, very thorough raking and clean burning may prove to be the solution of the problem.

**Clean-Up Policy Will Prevent Serious Damage**

While the results of work with parasites that prey upon the corn borer were very encouraging during the past season, the main dependence in the fight against this insect must still be placed upon thorough clean-up of infested crop and weed refuse. With clean-up measures properly carried out little if any damage from the insect may be expected to occur.

The borer is now so close to, if not already in, Illinois that it seems almost certain to be found in the state during the coming season. This does not mean any real change in the situation. It does mean, however, that if the farmers in the eastern counties are to avoid serious damage from this insect, they must adopt rotations and farm practices that will permit the plowing under or burning of all cornstalks and weeds in and about cornfields by the middle of May each year.

For further information concerning the life history of the corn borer and methods of combating it the reader is referred to Circular 321 of this Station, *Learning to Live With the European Corn Borer*. Copies may be obtained free of charge by addressing the COLLEGE OF AGRICULTURE, UNIVERSITY OF ILLINOIS, URBANA.

Anyone finding insects which he suspects are the European corn borer or other insects which he wishes identified can secure this service by sending specimens promptly to ENTOMOLOGIST, ILLINOIS NATURAL HISTORY SURVEY, STATE ENTOMOLOGY BUILDING, URBANA.