Expectations for corn flea beetles in 2001

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Abstract
There has been some debate about the effect of the recent winter on the survival of several insect populations, including those of the corn flea beetle. We do know that mild winters (when the sum of the average monthly temperatures for December, January, and February is greater than 90°F) improve the survival of overwintered beetles and the bacterium that causes Stewart’s disease. It was a very cold winter in Iowa, however, we had continuous snow cover for 90 days or more throughout much of Iowa. In the central and northern counties, snow cover of 1 to 2 feet was common for much of this time.

Keywords
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Disciplines
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Corn flea beetle, carrier of Stewart's disease in corn.

Fields should be scouted, especially in central and southern Iowa, when corn begins to emerge. This insect can physically damage seedling corn by chewing long lesions in the leaves. These feeding lesions run parallel to the leaf veins and they first appear as thin, silvery, or white streaks. Heavily injured leaves turn brown and wilt. The insect also can transmit a wilt called Stewart's disease. This disease can be controlled on susceptible corn by controlling the corn flea beetle with an insecticide.

Mike Gray, University of Illinois entomologist, writes in the Corn Insect Handbook [2] that "although most dent corn hybrids are resistant to the wilt phase of Stewart's disease after they develop beyond the 5-leaf stage, many hybrids remain somewhat susceptible to the leaf blight phase of this disease. If susceptible inbreds are infested with flea beetles before the 5-leaf stage, an insecticide may be warranted when 2-3 beetles per plant are present, and 10 percent of the plants are silver or white due to the beetles' feeding. Some sweet corn IPM programs in the northeastern United States advocate a treatment when the density of flea beetles is 6 beetles for every 100 plants examined. Early planting dates should be avoided for those inbreds or varieties that are susceptible to Stewart's disease."

Unfortunately, we don't have good economic thresholds for this insect in commercial dent corn. A threshold that has been used in past years for field corn prior to five true leaves is to consider treatment if 50 percent of plants show severe feeding injury and there are five or more beetles per plant. However, there is a big difference in five beetles on 1-leaf corn
compared with five beetles on 5-leaf corn. This is a weakness of this threshold in that it does not accommodate differences in stages of corn growth. Also, plants in drier soils, such as sandy fields, are more likely to suffer from the leaf injury. Obviously more research is needed on this insect.

A new systemic insecticide called imidacloprid, formulated as the seed treatment Gaucho, Gaucho Extra, or Prescribe, will be used by some farmers this year. Gaucho gives control only through the 1-leaf stage, whereas Prescribe may control beetles through the 5-leaf stage. Fields that are treated with one of these products should see reduced flea beetle feeding and Stewart's disease. Additionally, there are a number of insecticides registered for rescue treatment of corn flea beetles shown in the table.

**Insecticides labeled for corn flea beetle.**

<table>
<thead>
<tr>
<th>Insecticide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambush</td>
<td>6.4-12.8 oz/acre</td>
</tr>
<tr>
<td>Asana XL</td>
<td>5.8-9.6 oz/acre</td>
</tr>
<tr>
<td>Capture 2EC</td>
<td>2.1-6.4 oz/acre</td>
</tr>
<tr>
<td>Furadan 4F</td>
<td>2.5 oz/1,000 row feet</td>
</tr>
<tr>
<td>Gaucho 600F</td>
<td>6.4-12.8 oz/cwt of seed</td>
</tr>
<tr>
<td>Lorsban 4E</td>
<td>2-3 pt/acre</td>
</tr>
<tr>
<td>Penncap-M</td>
<td>2-3 pt/acre</td>
</tr>
<tr>
<td>Pounce 3.2EC</td>
<td>4-8 oz/acre</td>
</tr>
<tr>
<td>Sevin XLR Plus</td>
<td>1-2 qt/acre</td>
</tr>
<tr>
<td>Warrior</td>
<td>2.56-3.84 oz/acre</td>
</tr>
</tbody>
</table>

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