Early-Season Corn Flea Beetle Management

KEY POINTS

- Corn flea beetles are an early season pest of corn.
- Insect survival and corn plant feeding is contingent on mild winter weather.
- Stewart’s wilt bacterium is vectored by the overwintering adult corn flea beetles.

Biology

- Corn flea beetles are shiny, black, and are about 0.07 inch long with elongated hind legs (Figure 1, top).
- Adults overwinter in grassy areas around corn fields.
- Overwintering adults feeding on corn at or shortly after emergence can reduce leaf functions through direct feeding and/or introduce the bacterium causing Stewart’s wilt (Figure 1, bottom). The bacterium may have overwintered in the alimentary tracts of beetles which fed on infected corn plants the previous season.
- Overwintering females mate and lay eggs, which hatch into larvae in about 6 days, close to the base of corn plants in late spring.
- Larvae feed on corn roots and pupate.
- Within 2 weeks the beetles emerge from the soil.¹ This generation is the overwintering population for the next season.

Corn flea beetles create white feeding scars on corn leaves (Figure 2). If populations are extreme, plants are stressed, and plant growth is slow, their direct feeding can kill leaves and seedlings. Fields at greatest risk are those planted in cool, wet springs after a relatively mild winter.

Scouting, Thresholds, and Recommendations

- Fields at risk of infestation should be scouted every 4 to 5 days, early May to late June.
- Five sets of 20 seedlings/field should be examined to determine corn flea beetle densities
- Certain corn inbreds used in seed production and some product lines may be more susceptible to Stewart’s wilt.
- Treatments may be justified for products with low tolerance (check with your seed supplier for tolerance ratings) to Stewart’s wilt if plants have an average of 5 or more beetles/plant prior to the 4th leaf stage of growth, 50% of the seedlings show severe feeding, and growing conditions are poor.
- Disease symptoms can be more severe when plants are infected early.
- Seed treatments with an insecticide may be used to help protect seedlings from early infection.

¹ Corn flea beetle generations are very variable with extensive overwintering populations and a large number of eggs that hatch every spring. Some populations have more than one generation every year.
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- Foliar sprays of pyrethroids, organophosphates, and carbamates can be used to help protect seedlings against flea beetles.

- Growers who used a fungicide treatment only should scout to determine if an over the top foliar insecticide should be considered.

- Consult with your local extension specialist for specific treatment recommendations for your area.

- Where fields are at risk, consult your seed supplier for help in selection of products that have superior tolerance to Stewart’s wilt (Figure 3).

Beetle Survivability

Overwintering corn flea beetle survival is impacted by winter temperatures (Table 1). \(^2\)

<table>
<thead>
<tr>
<th>Average Monthly Temperature</th>
<th>Early season wilt probably will be</th>
<th>Late-season blight wilt be probable</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 27 °F</td>
<td>Absent or nearly so</td>
<td>A trace, at most</td>
</tr>
<tr>
<td>27-30 °F</td>
<td>Light</td>
<td>Light to moderate</td>
</tr>
<tr>
<td>30-33 °F</td>
<td>Moderate</td>
<td>Moderate to severe</td>
</tr>
<tr>
<td>&gt; 33 °F</td>
<td>Severe</td>
<td>Severe</td>
</tr>
</tbody>
</table>

Sources:

Web sites verified 2/19/18. 180309135208

Performance may vary from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower’s fields. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.

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Figure 2. Corn plant with very heavy feeding scars from corn flea beetles. Photo courtesy of University of Illinois, Bugwood.org. UGA1265147

Figure 3. Stewart’s wilt lesions (long-wavy) developing from the feeding scars created by over wintering corn flea beetles.