

Flea Beetle Assessment and Management

Assessment of Flea Beetles and Damage

- Flea Beetle management requires regular scouting as they can damage plants very quickly. The economic impact of flea beetles will vary from year to year and area to area.
- Yield loss of up to 10% is common where flea beetles are abundant.
- Flea beetles will feed on both canola and mustard crops as well as weeds such as flixweed and wild mustard.
- Sunny, warm, dry weather increases flea beetle feeding activity.
- Adult flea beetles feed on the surfaces of leaves, stems and pods and produce small pits. In cool conditions, feeding can also occur on the underside of leaves and on stems.
- Past the four-leaf stage, the plants are generally established and can outgrow the feeding damage.
- Economic threshold for flea beetle feeding on canola is when there is 25% defoliation and flea beetles are present. At this time, an application of a foliar insecticide should be evaluated.



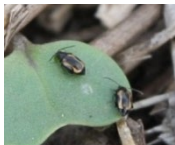
Feeding damage causing notches at leaf edges and small circular feeding pits.



Feeding damage on the lower stem.

Flea Beetle Identification

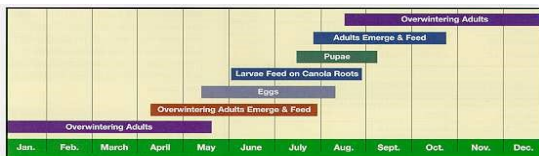
- Scout fields in the spring and assess damage to cotyledons and the first true leaves of seedlings daily. Continue scouting up to a minimum of a four-leaf stage, especially on sunny, calm days when temperatures exceed 14° C.
- Adult flea beetles can be observed in the spring and again in the fall as they emerge and feed on mature canola plants and weeds.
- There are two economically important flea beetles in canola.
- **Crucifer Flea Beetle:** Completely black with a metallic sheen. Typically emerge later in the spring than striped.
- **Striped Flea Beetle:** Black with distinct stripes on either side of the back. Typically emerge earlier in the spring than crucifer.



Striped Flea Beetle



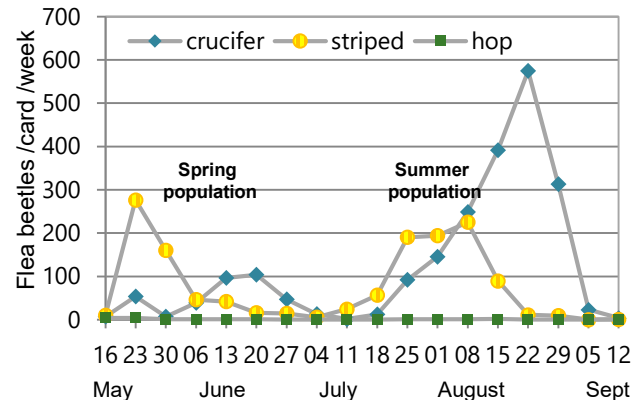
Crucifer Flea Beetle



Flea Beetle Life Cycle (Courtesy Government of Saskatchewan)

Flea Beetle Distribution and Life Cycle

- Crucifer flea beetles have more commonly been found in the brown soil zones of the western prairies, while the striped flea beetles have historically been the dominant species in the black and grey soil zones.
- Since 2011 a population shift has occurred across the prairies where the striped flea beetle is becoming more predominant in all areas of Western Canada.
- The hop flea beetle (a native flea beetle that is present in low numbers across all soil types) emerges first in the spring
- The striped flea beetle has been found to emerge and become active 1 to 4 weeks prior to the crucifer flea beetle.
- The crucifer flea beetle has been found to be active later into the fall past the time the striped flea beetle has gone into hibernation.



Weekly flea beetle counts (on sticky cards) from AAFC Saskatoon 2015. (Courtesy Dr. Bob Elliot, Agriculture and Agri-Food Canada)

Flea Beetle Management Tips

- Seed as early as possible into warm, moist soil to provide the best opportunity for rapid seedling growth and development.
- Higher plant populations will provide more feeding material and reduce damage levels per plant
- Control volunteer canola and other cruciferous weeds to reduce food sources for early emerging flea beetles.
- Use foliar insecticide control methods only as necessary to reduce the risk of flea beetle insecticide resistance development and to protect beneficial insects
- The best method of management is use of an insecticide seed treatment
- Neonicotinoid seed treatments are present in all treated canola seed and have been since 2001
- In greenhouse studies, crucifer flea beetles have shown higher mortality to neonicotinoid seed treatments than striped flea beetles
- All seed treatments have been shown to work best in drier soil conditions and higher temperatures
- Mixtures of insecticides will be advantageous when conditions are wet or high flea beetle populations are present.