Managing Flea Beetles and Springtails in Sugar Beets
Michigan State University
Cooperative Extension Service
IPM Facts
Doug Landis and Bruce Glebink, Department of Entomology and Pesticide Research Center
December 1992
2 pages

IPM FACTS
MICHIGAN STATE UNIVERSITY
Extension Bulletin E-2266 Revised December 1992

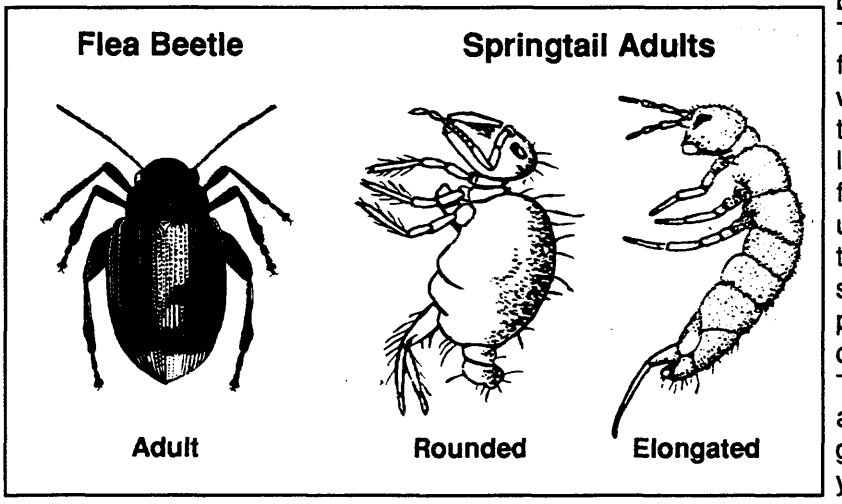
Managing Flea Beetles and Springtails in Sugar Beets

Doug Landis and Bruce Giebink
Department of Entomology
and Pesticide Research Center
Michigan State University

Flea beetles[1] and springtails[2] can damage newly germinated and small seedling beets. The feeding of one or both of these pests can result in stand loss and reduced seedling vigor.

Description of life stages:

Flea beetles are small, hard-shelled insects with enlarged hind legs. They jump like fleas when disturbed. Several species may be present on Michigan sugar beets, including the corn, spinach, pale-striped, and red-headed flea beetles. The spinach flea beetle is the largest and most easily recognized. Almost 1/4-inch long, the spinach flea beetle has dark, greenish-black wing covers, a yellow-orange thorax, and a dark head. The pale-striped flea beetle is about half the size of the spinach flea beetle and ranges from shiny reddish to brownish-yellow. A straight broad yellow stripe runs down each wing cover. Corn flea beetles are shiny black and are about 1/8 inch long. Red-headed flea beetles are slightly larger (1/6 inch) with a dark black body and reddish-yellow heads. Flea beetle larvae are whitish, slender, cylindrical worms with tiny legs and brownish heads. They range from 1/8 to 1/3 inch long when fully grown.



Springtails are tiny, wingless insects less than 1/5 inch long. They have a "spring-like" tail which flips them into the air. Depending on the species, they may have either rounded or elongated bodies. The common garden springtail has a gray to yellow rounded body. Other species are dark gray to black.

Life cycle:

The flea beetle life cycle varies greatly between species. Usually the adult beetles hibernate in protected areas such as in leaf litter or along the margins of wooded areas. Most emerge in late April and feed on weeds and tree leaves until sugar beets are available. Adults feed on the cotyledons and the first true leaves of the sugar beet plant. They lay eggs in clusters on the foliage or in the soil around the base of the plant. The larvae may feed for 3 or 4 weeks on either the undersides of leaves (spinach flea beetle) or on underground portions of the sugar beet. Pupation usually occurs in the soil. There are generally one to two generations a year.

Springtails may suddenly appear in very large numbers. Their food consists chiefly of decaying vegetation. Most infestations can be associated with damp surroundings, but garden springtails can live in somewhat arid conditions and feed on living plants.

---

[1] Spinach flea beetle: *Disonycha xanthomelas* (Dalman)
Pale-striped flea beetle: *Systena blanda* Melsheimer
Red-headed flea beetle: *Systena frontalis* (Fitch)
Corn flea beetle: *Chaetocnema pulicaria* Melsheimer

[2] Garden springtail: *Bourletiella hortensis* (Fitch)

Damage:

Flea beetles are frequently serious pests in seedbeds and young plants. The beetles eat very small, rounded or irregular holes through or into the leaf, leaving behind numerous "shot holes." Garden springtail feeding results in scarring of surface tissues and can severely damage seedling plants.

Management:

Biological Control - Natural enemies of flea beetles and springtails are not well known.

Cultural Control - Keeping fields free of weeds will help reduce flea beetle populations because flea beetles overwinter in certain weeds before moving to nearby beet fields. It is particularly important to eliminate chickweed, lambsquarter, cocklebur and pigweed to reduce spinach and pale-striped flea beetle populations. Crop rotation may also reduce populations, since flea beetle populations increase in areas where beets are grown year after year. Cultivation and herbicide applications, although not aimed at these pests, will frequently cause at least a temporary reduction in their damage.

Chemical control - Generally, flea beetles are not difficult to control, but often they will have already seriously injured the beets before they are detected. This makes scouting critically important. Currently, no insecticides are registered to control springtails, specifically the garden springtail.

Scouting & Economic Thresholds:

Treat areas where 25 percent of small plants show flea beetle damage or if there is stand loss.

Recommended insecticide applications for controlling flea beetles in sugar beets

Chemical	Formulation[1]	Rate[2]	RUP[3]	Restrictions & precautions
carbaryl (Sevin)	4F	1 - 1 1/2 qt	N	14 days PHI. Do not apply to seedling plants if plants are wet or if rain is expected within 48 hours.
	80 WP	1 1/4 - 1 7/8 lb	N	
	50 WP	2 - 3 lb	N	
Lannate	90 SP	1/4 - 1 lb	Y	7 days PHI for beets, 30 days PHI for tops.
	1.8 L	1 - 4 pt	Y	Same.
methyl parathion	4 EC	1/2 - 3/4 pt	Y	20 days PHI for beets. 60 days PHI for tops.

[1] Other formulations may be available.

[2] Rate per acre. Be sure your equipment is properly calibrated. Refer to Extension Bulletin E-1582 **Chemical Control of Insects and Nematodes in Field and Forage Crops**, available at your county Extension office. Be sure to apply the insecticide in a band over the plants.

[3] Restricted use pesticide. If yes (Y), a pesticide applicator certification is required.

This bulletin was originally prepared with the support of the U.S. Department of Energy, Grant No. DE-FG0276CS60204. However, any opinions, findings, conclusions or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of DOE.

To protect yourself and others and the environment, always read the label before applying any pesticide.

This publication contains pesticide recommendations based on research and pesticide regulations. However, changes in pesticide regulations occur constantly. Some pesticides mentioned may no longer be available, and some uses may no longer be legal. If you have questions about the legality and/or registration status for using pesticides, contact your county Cooperative Extension Service office or the manufacturer's representative.

Illustrations courtesy of North Carolina State University Cooperative Extension Service, Extension Bulletin AG-271, and University of Illinois at Urbana-Champaign Cooperative Extension Service, Entomology Fact Sheet NHE-70.

Revision 12:92-TCM-UP-Price 25 cents. File 27.327 (Insects)