

Cole Crops XXIII-5

Flea Beetles

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Flea beetle adult.

Flea beetles are common insects in cole crops, and can cause damage by slowing growth or thinning seedling stands. Leafy crops may continue to be damaged later in the season. In larger plants, damage is mostly cosmetic and does not hurt plant health. Mustards, radish and Chinese cabbage are preferred hosts.

Identification (and life cycle/seasonal history)

Flea beetle adults are small (three to five millimeters) beetles, which characteristically jump off plants when disturbed. The larvae are tiny and whitish, and are found feeding on plant roots. The most common species affecting cole crops, the western cabbage flea beetle, overwinters in the adult stage in and around crop residue, becoming active early in the spring, usually feeding on wild crucifers. The larvae are laid in soil near the crop seedlings, feeding on root hairs.

Three generations per year are typical. Other flea beetle species may feed on cole plants, but are less likely to damage plants other than small, slow-growing seedlings.

Plant response and Damage

Flea beetle adults chew holes or pits in the leaves of plants; sometimes the area around the wound develops a purplish or brown color. The larvae do not damage plants by their feeding.

Management Approaches

Cultural Control

Since seedlings are most at risk, providing plants with good seedbeds, optimal water and fertilization, or using vigorous transplants that can outgrow early damage will all minimize plant death or retarded growth caused by flea beetle feeding. Higher than normal seeding rates, to be thinned later, may also allow feeding without yield loss. Highly susceptible trap crops, or even wild crucifer host plants, can be grown and later destroyed to divert flea beetles from the main crop. Crop rotation and tillage of crop residue is unlikely to be of much benefit in avoiding flea beetle infestations. In garden settings or for high value crops, row covers over seedlings separate flea beetles from the plants during establishment.

Host Plant Resistance

Mature plants' health is not affected negatively by flea beetle feeding.

Biological Control

Flea beetles are attacked by predators, parasites and other consumers, but little is known about the mechanics explaining population variation from year to year.

Chemical Control

Control is usually needed only during establishment, though several treatments may be necessary in slow-growing plants, since adults become active over an extended period. Leafy crops may require treatment as harvest approaches to preserve marketability. Insecticides will not control extremely high populations of flea beetles.

Product List for Flea Beetles:

Insecticide	Product per Acre	Preharvest Interval , remarks
Sevin XLR+ ¹ , 4F ¹	1 qt	(3 days) A carbamate insecticide (carbaryl). The 80S, 4F, and 5OW formulations are highly hazardous to bees . Some rotational restrictions. May be used with sprinkler irrigation. 12 to 24 hour reentry proposed.
Sevin 80S ¹	1.25 lb	
Sevin 5OW ¹	2 lb	
Asana XL ^{R,1}	5.9-9.6 fl oz	(3 days) Not labelled for Brussel sprouts. Proposed 24 hour reentry interval. Pyrethroid insecticide (esfenvalerate). Some rotation restrictions with root crops.
Thiodan 3E, Endocide 3E	1-1.5 qt	(7 days broccoli, cabbage; 14 days cauliflower, Brussel sprouts) Root crop rotational restrictions. Proposed 48 hour reentry interval requirement. Chlorinated hydrocarbon insecticide (endosulfan).
Thiodan 5OW	1.5-3 lb	
DiSyston 15G ^R	7.4 oz/1000 row-ft	Planting time treatment. Do not allow contact with seed.
Mustang 1SEW ^R	2.39-4.26 fl oz	Preharvest interval, remarks (1 day) Registered for cabbage only. Restricted Use due to

		hazards to fish and aquatic organisms. Pyrethroid insecticide. Maximum 0.3 lb a/A may be applied in season. 12 hour reentry.
Mustang 1.5EC ^R	0.028-0.05 lbs a.i. (2.39-4.26 fl. Oz)	1 day. Cabbage only. Maximum 0.3 lbs a.i./acre/season. Restricted use product due to hazards to fish and aquatic organisms 12 hour reentry.
Warrior 1.E ^R	2.56-3.84 fl oz	(1 say) Broccoli and cabbage only. Restricted Use due to hazards to fish and aquatic organisms. Pyrethroid insecticide. Maximum 0.24 lb ai/A may be applied in season. 24 hour reentry.
Ammo WSB	1-2 bags/A	(1 day) Labelled for most cole crops including greens.
Ammo 2.SEC ^R	2.5-S fl oz	Restricted Use due to hazards to fish and aquatic organisms. Pyrethroid insecticide. Maximum 0.6 lb ai/A may be applied in season. 12 hour reentry.
Baythroid 2 ^R	1.6-2.8 fl oz	(0 days) Labeled for radishes only. Restricted use due to toxicity to fish and aquatic organisms. Pyrethroid insecticide. Maximum S applications per season, with minimum 7 day intervals between treatments.
Kryocide 96W ¹	8-16 lbs	14 days. Broccoli, Cabbage, Cauliflower, Brussels sprouts, Kohlrabi. Inorganic insecticide (sodium aluminoflouride) with stomach poison activity. Maximum 96 lbs/acre/season with 14 day minimum period between applications. 12 hour reentry.

^RRestricted use pesticide. ^LLabeled for chemigation

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Categories: Cole crops, Insects, Flea beetles

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