Cucurbits

Beet Armyworm

Scientific Name: *Spodoptera exigua*

(Reviewed 12/09, updated 12/09, corrected 9/10)

In this Guideline:

DESCRIPTION OF THE PEST

Larvae are usually dull green and have wavy, light-colored stripes running lengthwise down the back and broader stripes on each side. Eggs are laid in a mass covered with hairlike scales.

DAMAGE

Primarily a foliage feeder, the beet armyworm will also attack fruit, creating single or closely grouped circular or irregular holes. In many cases, feeding is superficial and little loss would result if not for decay organisms that enter wounds and rot fruit. The caterpillars occasionally develop inside the fruit.

MANAGEMENT

While populations of this pest tend to build up in alfalfa and weedy areas around the field, beet armyworm only needs to be controlled if it is feeding on the crop. Keep crop residue and weeds in field and surrounding areas to a minimum to lessen the attraction of the field.

Biological Control
The parasitic wasp, *Hyposoter exiguae*, is important in controlling populations of this pest. Beet armyworm larvae can be easily checked for the presence of this wasp by pulling the larva apart and looking for the parasite larva.

Organically Acceptable Methods
Sanitation in the field and surrounding areas along with biological control and sprays of *Bacillus thuringiensis* or the Entrust formulation of spinosad are acceptable to use in an organically certified crop.

Monitoring and Treatment Decisions
Beet armyworm may be present in and around the field feeding on bindweed and little mallow (malva). Monitor weed and crop foliage for larvae and treat the crop before there is economically important feeding damage to fruit. If young instars are found, consider treating with a low impact product such as *Bacillus thuringiensis*, methoxyfenozide (Intrepid), or spinosad (Entrust).

Common name (trade name)	Amount/Acre	R.E.I.+ (hours)	P.H.I.+ (days)

The following materials are listed in order of usefulness in an IPM program, taking into account efficacy, pesticide registrations, information related to natural enemies and honey bees, and environmental impact. Not all registered pesticides are listed. Always read label of product being used.

A. SPINETORAM

(Radiant) SC	5–10 fl oz	4	see comments

MODE OF ACTION GROUP NUMBER[1]: 5

COMMENTS: PHI for cucumbers is 1 day and for other cucurbits 3 days.

B. SPINOSAD

(Entrust)#	1.25–2.5 oz	4	see comments
(Success)	4–8 fl oz	4	see comments

MODE OF ACTION GROUP NUMBER[1]: 5

COMMENTS: Time spray to target eggs at hatch or small larvae. Do not apply more than 9 oz Entrust or 29 fl oz of Success/acre/season. PHI for cucumbers is 1 day and for other cucurbits 3 days.

C. CHLORANTRANILIPROLE

(Coragen)	3.5–5 fl oz	4	1

MODE OF ACTION GROUP NUMBER[1]: 28

D. METHOXYFENOZIDE

(Intrepid) 2F	4–10 fl oz	4	3

MODE OF ACTION GROUP NUMBER[1]: 18A

COMMENTS: Time spray to target eggs and small larvae. Use allowed under a supplemental label.

E. BACILLUS THURINGIENSIS ssp. AIZAWAI#

MODE OF ACTION GROUP NUMBER[1]: 11.B1

(various products)	Label rates	4	0

COMMENTS: Use to control small armyworms only (first and second instar) when populations are light and full coverage sprays are applied. Repeat treatment as necessary. If mature larvae or heavy populations are present, use another material.

F. INDOXACARB

(Avaunt)	3.5 oz	12	3

MODE OF ACTION GROUP NUMBER[1]: 22

G. METHOMYL*

(Lannate) 90SP	0.5–1 lb	48	see comments
(Lannate) LV	1.5–3 pt	48	see comments

MODE OF ACTION GROUP NUMBER[1]: 1A

COMMENTS: For use on cucumbers, melons and summer squash only. PHI is 1 day when 0.5 lb or less for 90SP or 1.5 pt or less for LV formulations is used; when more than 0.5 lb (90SP) or 1.5 pt (LV) is used, PHI is 3 days.

* Permit required from county agricultural commissioner for purchase or use.

\+ Restricted entry interval (R.E.I.) is the number of hours (unless otherwise noted) from treatment until the treated area can be safely entered without protective clothing. Preharvest interval (P.H.I.) is the number of days from treatment to harvest. In some cases the REI exceeds the PHI. The longer of two intervals is the minimum time that must elapse before harvest.

[1] Rotate chemicals with a different mode-of-action Group number, and do not use products with the same mode-of-action Group number more than twice per season to help prevent the development of resistance. For example, the organophosphates have a Group number of 1B; chemicals with a 1B Group number should be alternated with chemicals that have a Group number other than 1B. Mode of action Group numbers are assigned by IRAC (Insecticide Resistance Action Committee). For additional information, see their Web site at http://www.irac-online.org/.

Acceptable for use on organically grown produce.

PUBLICATION

UC IPM Pest Management Guidelines: Cucurbits
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Insects and Mites
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http://www.ipm.ucdavis.edu/PMG/r116301311.html