

## Beet Armyworm

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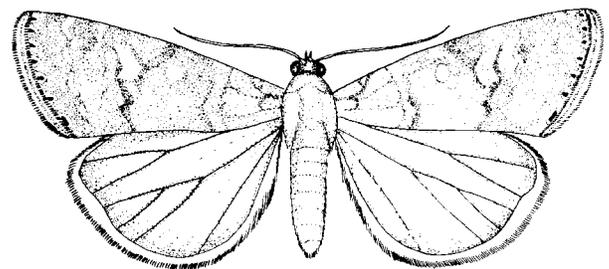
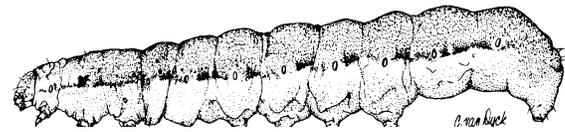
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### Description and Biology of the Pest

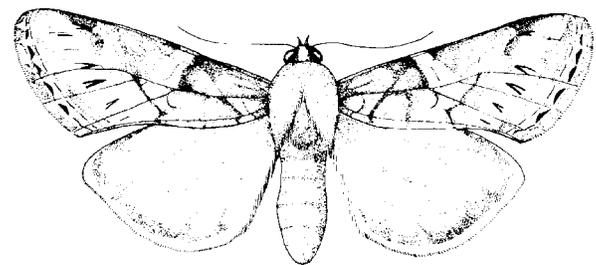
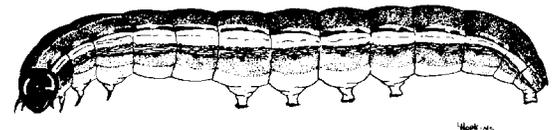
Beet armyworm (*Spodoptera exigua*) caterpillars are smooth skinned with few or no hairs on the body, may be olive green to almost black in color down the middle of the back, and have a yellow stripe on each side of the body. They usually have a conspicuous black dot on each side of the second body segment behind the head and just above the second pair of legs, a white colored dot at the center of each spiracle, and reach a length of about one inch. In contrast, the western yellow striped armyworm has a black dot on its first abdominal segment, a brown colored dot at the center of each spiracle, and an inverted "Y" marking that is white to orange in color on the front of its dark brown head. The alfalfa caterpillar can be distinguished from the beet armyworm by its velvety green smooth surface and a single prominent white stripe along each side. The common armyworm, which is occasionally found in corn and sudangrass, differs from the beet armyworm in that it is dark green to light grey with two orange stripes along each side. Additionally, the common armyworm lacks the inverted Y-shaped mark found on the front of the head of the western yellow striped armyworm.

Adult moths live 4 to 7 days and are about 3/4 inch long, dusky, mottled grey with distinct lighter markings on the forewings, including a rounded and crescent-shaped spot. They are nocturnal, but may be picked up in sweep net samples. The female moth lays small masses of pale greenish or pinkish, striated eggs on the undersides of leaves, covering them with dirty white hairlike scales. Early instar larvae hatch within 2 to 5 days and usually feed in groups, skeletonizing leaves and spinning silk over the feeding site. Rate of development depends on temperature with larvae living 18 to 24 days and pupation lasting 5 to 8 days. A complete generation is completed within 21 to 35 days, often with 5 or more generations per year. They do not overwinter in Arizona desert production regions, but continue to feed on various plant hosts through the winter. The beet armyworm is a pest of many crops including alfalfa, cotton, and vegetables. Pigweeds (*Amaranthus* sp.), and nettleleaf goosefoot are also favored hosts.


**Beet Armyworm**

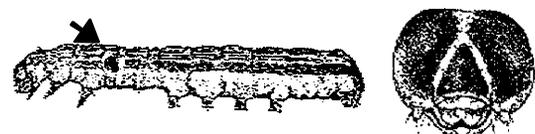
Caterpillar: to 1 inch long

Moth: to 3/4 inch long


**Yellowstriped Armyworm**

Caterpillar: to 2 inch long

Moth: to 1 inch long


**Beet Armyworm**

**Yellowstriped Armyworm**

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## Damages

Young beet armyworms skeletonize foliage, leaving the veins of leaves largely intact. Heavy feeding and leaf skeletonization on the tips of the stalks by early instars can cause distinct flagging visible from a distance as terminal leaves turn white. Comparatively, the alfalfa caterpillar eats the entire leaf of alfalfa, and although the alfalfa weevil also skeletonizes leaves, it is not present in alfalfa during the summer when armyworm damage occurs.

Early in the season, beet armyworm populations may move to seedling cotton. The caterpillars eat all but the epidermal leaf layer producing a windowed effect. Later in the season, they characteristically bore into the cotton plant terminals and feed on squares, blossoms, and green bolls. Their damage to cotton fruit is recognized by extensive feeding and holes chewed in adjacent bracts and leaves.

## Biological and Cultural Controls

Many predators and parasites combine to substantially maintain beet armyworm populations at low levels. Insecticide sprays for other pests can disrupt this natural control. Populations are sometimes held in check by parasitic wasps (including *Hyposoter* sp.), tachinid flies, predators, and a virus disease. Beet armyworms killed by a virus become black and limp and often are found hanging from

alfalfa leaves. Early cutting of alfalfa hay can give satisfactory control of the beet armyworm, if the infestation appears late in the cutting cycle. Watch for beet armyworm on adjacent crops and on weeds in and around cotton fields.

## Monitoring and When to Treat

Insecticide treatments are usually required in alfalfa when at least 5-10 beet armyworm caterpillars greater than ½ inch long are found per 90 degree sweep (or 15 per 180 degree sweep), up to one week before alfalfa is intended to be cut. Insecticide treatments may be necessary when alfalfa hay prices and potential yields are high enough to warrant the expense, and it is too early to harvest the hay. Once alfalfa enters summer slump, and hay quality and tonnage decline, growers may not be able to justify the cost of insecticide applications for beet armyworm control. Although several synthetic pyrethroid insecticides are labeled for beet armyworm control in alfalfa, they are effective only on first to second (and occasionally third) instar larvae. Furthermore, beet armyworm populations resistant to Lannate (methomyl) have been found in Imperial and Yuma County alfalfa.

## References

IPM Manual Group. 1985. Integrated pest management for alfalfa hay. UC Davis Press.

## Currently Registered Insecticides for Alfalfa Weevil in Arizona

Insecticide	Preharvest Interval	Other Restrictions/Remarks
Chlorpyrifos (Lock- On, Lorsban)	½ pint = 7 days 1 pint = 14 days 2 pints - 28 days	One application per cutting. Four applications per season.
Cyhalothrin (Warrior )	7 days	One application percutting First and second instars only
Malathion (Cythion)	0 days (EC) 7 days(Cythion)	Do not apply when bees are working fields.
Methomyl (Lannate)	7 days	Ten applications per crop (3.6 lbs.a.i./acre/crop) Apply at 5 to 7 days intervals
Methoxychlor	7 days	Apply at 7 to 14 day intervals.
Methyl Parathion (Penncap- M)	15-20 days	Toxic to bees First through third instars only
Permethrin (Ambush, Pounce)	<0.1 lb. a.i. = 0 days >0.1 lb. a.i. = 14days	0.2 lb. a.i./acre/ cutting limit. Toxic to bees and fish (see label).

Meister Publishing. 1997. Insect Control Guide.  
Willoughby, OH.

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