

Hay and Pasture Insect Pests

Armyworm

Armyworm outbreaks occasionally occur in multiple crops, in years with heavy flights north into Michigan.

Description: Caterpillars variable in color (black/brown/green). Narrow light stripe across back and broad stripes running down sides of body.

Life cycle: Probably migrate to Michigan each spring. 2-3 generations per year.

Type of damage: Defoliation by larvae.

Threshold: Treat when there are 6 or more armyworms per sq ft.

List of Registered Insecticides, *RUP (rate per acre):

Carbaryl 4L (2 to 3 pts)

Dipel DF (1 to 2 lb) or ES (2.0 to 4.0 oz)

Entrust (0.63 to 1.25 oz)

Javelin (0.25 to 1.5 lb)

Lambda-Cy EC* (2.56 to 3.84 oz)

Malathion 5 (2 to 2.25 pts) or 8 Aquamul (1.25 pt)

Mustang Max EC* or EW* (2.8 to 4 oz)

Pyganic EC 1.4 II (16 to 64 oz, **Grasses only**)

Pyganic EC 5.0 II (4.5 to 18 oz, **Grasses only**)

Sevin 4F or XLR Plus (1 to 1.5 qt)

Sevin 80S or 80WSP (1.25 to 1.875 lb)

Silencer* (2.56 to 3.84 oz)

Tracer (1 to 2 oz)

Warrior w/ ZeonTech* (2.56 to 3.84 oz)

Xentari (0.5 to 1.5 lb)

European skipper

Introduced into North America in 1910. CDD has never seen populations over threshold.

Description: Adult is pumpkin orange, resembles a butterfly. Larvae are small, greenish caterpillars up to ¾ inch in length.

Life cycle: Eggs hatch in late April. Larvae feed until mid-June, then pupate. Adults emerge in late June to early July. One generation per year.

Type of damage: Larvae feed on grass blades, rolling and stripping the leaves. Prefers timothy.

Sampling: Cut several square-foot samples of forage down to the ground and place in bags. Leave overnight. Larvae will crawl out of grass to be counted the following day.

Threshold: Treat when there are 6 larvae per sq ft. For best protection, treat when the larvae are small (less than about 3/8 in long). Use higher rates for larger (greater than 1/2 inch long) larvae.

List of Registered Insecticides, *RUP (rate per acre):

Dipel DF (0.5 to 1.0 lb) or ES (1 to 2 pt)

Lambda-Cy EC* (1.92 to 3.2 oz)

Mustang Max EC* or EW* (2.8 to 4 oz)

Sevin 4F or XLR Plus (1 to 1.5 qt)

Sevin 80S or 80WSP (1.25 to 1.875 lb)

Silencer* (1.92 to 3.2 oz)

Warrior w/ ZeonTech* (1.92 to 3.2 oz)

Xentari (0.5 to 1.5 lb)

Grasshoppers

Grasshoppers are common in agricultural fields, but cause damage only during occasional outbreak years.

Life cycle: Eggs overwinter in soil; nymphs hatch in June. As nymphs grow, feeding damage increases. Females lay eggs in soil in late summer.

Type of damage: Defoliation by nymphs and adults.

Conditions favoring damage: Unplowed or fallow areas, such as hay fields and pastures, are preferred egg-laying sites. Dry, warm weather enhances nymph survival.

Management: Biological - A fungal pathogen kills many eggs and nymphs under wet spring conditions. Natural enemies (birds, rodents, amphibians) also feed on grasshoppers, but may not keep up during outbreaks.

Threshold: Treat when there are eight grasshoppers or more per sq yard in hay less than 6 in tall, or 16 or more per sq yard in taller hay.

Note: In outbreak years, grasshoppers produced in hay fields and pastures may move into neighboring crops.

List of Registered Insecticides, *RUP (rate per acre):

Carbaryl 4L (1 to 3 pts)
 Fyfanon (1.5 to 2 pt) or ULV (8 to 12 fl oz)
 Lambda-Cy EC* (2.56 to 3.84 oz)
 Malathion 5 (1.5 to 2 pt) or 8 Aquamul (1.25 pt)
 or 8F (1 to 1.25 pts)
 Malathion ULV (8 to 12 fl oz)

Mustang Max EC* or EW* (2.8 to 4 oz)
 Sevin 4F or XLR Plus (0.5 to 1.5 qt)
 Sevin 80S or 80WSP (0.63 to 1.875 lb)
 Silencer* (2.56 to 3.84 oz)
 Warrior w/ ZeonTech* (2.56 to 3.84 oz)

Winter cutworm (*Noctua pronuba*)

Recent/ emerging pest. The first report of damage in the U.S. by this insect was in northern Michigan in fall 2007.

Pest status: The first report of economic damage in the U.S. by this insect was in northern Michigan, in fall 2007.

Life cycle: Adults (yellow underwing moths) begin to emerge in May, but some may emerge later in the summer. Moths fly at night into October. Caterpillars are found perhaps as early as July, but are commonly found by August and September. Winter cutworms can withstand very cold conditions, feeding in fields well into fall, when night time temperatures dip below freezing. Even during the winter, caterpillars emerge and feed on warm days.

Type of damage: Defoliation by caterpillars in the fall, leaving no crop residue on the field. Stands damaged in the fall suffered severe to total loss in the spring (the grass portion of the hay stand was killed).

Conditions favoring damage: Thus far, economic damage was found in fields only in the upper 1/3 of the lower peninsula.

Management: No insecticide labels specifically list winter cutworm as a target in hay/pasture. I suggest using guidelines and insecticide listed for armyworm control as a baseline. Based on experience from 2007-08, insecticides sprays, even those applied late in the fall under cool temperatures, did a good job of killing winter cutworm larvae.

Insecticides Registered for Hay and Pasture

Trade name	Common name	Class	Recommended for:	PHI days	REI hrs	Precautions and Remarks
<i>Bt</i> [Dipel DF/ ES, Javelin, Xentari]	<i>Bacillus thuringiensis</i>	Bio	armyworm, skippers	0	4	<i>Bt</i> is a biological insecticide produced from the bacterium <i>Bacillus thuringiensis</i> . Effective only against early-stage larvae. Recommended when honeybees may be exposed.
Carbaryl 4L	carbaryl	Carb	armyworm, grasshoppers, skippers	14	12	Do not apply if honeybees are foraging in the field. Maximum 2 applications per season.
Entrust	spinosad	Bio	armyworm	0 forage 3 hay	4	Do not graze cattle until sprays dry. Max 3.75 oz per acre per season.
Fyfanon	malathion	OP	grasshoppers	0	12	
Lambda-Cy EC (RUP)	lambda cyhalothrin	Pyr	armyworm, grasshoppers, skippers	0 forage 7 hay	24	Max 3.84 oz per cutting and 11.52 oz total per season. Retreatment interval – 30 days.
Malathion 5,8Aquamul,8F,ULV	malathion	OP	armyworm, grasshoppers	0	12	
Mustang Max EC, EW (RUP)	zeta-cypermethrin	Pyr	armyworm, grasshoppers	0 forage 7 straw	12	Maximum 4 oz per cutting and 16 oz total per season. Retreatment interval – 7 days.
Pyganic EC	pyrethrum	Bio	armyworm	0	12	Use on grasses only. Listed by the Organic Materials Review Institute (OMRI) for use in organic production.
Sevin 4F, XLR Plus, 80S, 80WSP	carbaryl	Carb	armyworm, grasshoppers, skippers	14	12	Do not apply if honeybees are foraging in the field. Maximum 2 applications per season.
Silencer (RUP)	lambda cyhalothrin	Pyr	armyworm, grasshoppers, skippers	0 forage 7 hay	24	Max 3.84 oz per cutting and 11.52 oz total per season.
Tracer	spinosad	Bio	armyworm	0 forage 3 hay	4	Do not graze cattle until sprays dry. Max 6 oz per acre per season.
Warrior w/ ZeonTech (RUP)	lambda cyhalothrin	Pyr	armyworm, grasshoppers, skippers	0 forage 7 hay	24	Max 3.84 oz per cutting and 11.52 oz total per season.