

Cutworms and Armyworms

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Caterpillar Monitoring.

Universal bucket traps containing feeding attractant baits and light traps were deployed to candidate mint fields in Prosser, Paterson, Pasco, and Royal City in spring 2004.

Concurrently sweepnet samples for caterpillar populations were conducted weekly at each field site. Captured caterpillars were brought back to the laboratory and reared out to moths for positive identification. Although these collections were directly from mint fields it is likely that these same caterpillars and moths are distributed within alfalfa fields as well.

From larval collections:

<u>Common name</u>	<u>Scientific name</u>
false celery leaf-tier	<i>Udea profundalis</i>
alfalfa looper	<i>Autographa californica</i>
celery looper	<i>Anagrapha falcifera</i>
corn earworm	<i>Helicoverpa zea</i>
Western yellow-striped armyworm	<i>Spodoptera praefica</i>

From light traps:

<u>Common name</u>	<u>Scientific name</u>
pyralids	Pyralidae
lined sphinx	<i>Hyles lineata</i>
one-eyed sphinx	<i>Smerinthus cerisyi</i>
variegated cutworm	<i>Peridroma saucia</i>
	<i>Euxoa septentrionalis</i>
corn earworm	<i>Helicoverpa zea</i>
	<i>Euxoa spp. unidentified</i>
	<i>Dargida procincta</i>
dingy cutworm	<i>Feltia jaculifera</i>
spotted cutworm	<i>Xestia c-nigrum</i>
tiger moth	Arctiidae
forage looper	<i>Caenurgina erechtea</i>
Bertha armyworm	<i>Mamestra configurata</i>
Western yellow-striped armyworm	<i>Spodoptera praefica</i>
	<i>Agrotis vetusta</i>
	<i>Euxoa albipennis</i>
	<i>Lacanobia subjuncta</i>

clover cutworm	<i>Discestra trifolii</i>
alfalfa looper	<i>Autographa californica</i>
cabbage looper	<i>Trichoplusia ni</i>

From feeding attractant traps:

<u>Common name</u>	<u>Scientific name</u>
forage looper	<i>Caenurgina erechtea</i>
variegated cutworm	<i>Peridroma saucia</i>
Bertha armyworm	<i>Mamestra configurata</i>
spotted cutworm	<i>Xestia c-nigrum</i>
	<i>Euxoa spp. unidentified</i>
clover cutworm	<i>Discestra trifolii</i>
dingy cutworm	<i>Feltia jaculifera</i>
	<i>Euxoa septentrionalis</i>
Western yellow-striped armyworm	<i>Spodoptera praefica</i>
alfalfa looper	<i>Autographa californica</i>
corn earworm	<i>Helicoverpa zea</i>
	<i>Agrotis vetusta</i>
	<i>Dargida procincta</i>
	<i>Lacanobia subjuncta</i>
true armyworm	<i>Pseudaletia unipuncta</i>

Problem Description- Cutworms

Cutworms are inconspicuously marked, dull-colored caterpillars ranging from 0.6 to 2.0 inch (1.5 to 5 cm) in length. There are several species of cutworms verified as pests of alfalfa grown in Washington State. These include the spotted cutworm, *Xestia c-nigrum* (L.) and closely related *Euxoa* cutworm species complex (including the rebacked cutworm, *Euxoa ochrogaster* (Guenee)). Positive identification is important as behavioral differences affect control actions among these pests. Fifth instar spotted cutworms are about 1.3 inch (3.5 cm) long and are a dull gray brown. The spotted cutworm overwinters as 3rd to 5th instar larva. Spotted cutworms typically pupate after feeding ceases in spring and the subsequent 2nd (and occasionally 3rd generation) are associated with alfalfa or other weed or crop hosts. Other cutworm species, such as the rebacked cutworm, overwinter as an egg in the soil.

Mature alfalfa stands can tolerate a significant amount of damage with little economic loss. Yield reduction may occur primarily due to crop injury on alfalfa as it breaks dormancy in spring. Seedling damage in April to early May is typically associated with spotted cutworm feeding. Feeding damage in late May and June has been typically attributed to other species.

Problem Description- Armyworms

Western yellow striped armyworms *Spodoptera praefica* can be abundant in alfalfa fields during the late summer months in Washington State. The caterpillar is usually black, with two prominent stripes and many narrow bright ones on each side. At maturity it is approximately 1.5 to 2 inches long. Eggs are laid in clusters on the upper side of leaves and covered with a gray, cottony material. Eggs hatch in a few days and larvae reach full size in 2 to 3 weeks. Larvae pupate on or just under the soil surface. Adults are relatively non-descript brown moths that primarily fly at night but may be encountered flying up as you walk through the field. There are typically 2 to 4 (typically 3) generations per year in eastern Washington State. This pest may be abundant at any time from June to early September.

Management:

Populations of armyworms and cutworms are typically kept relatively low by natural enemies and pest outbreaks tend to be cyclic. Maintaining conservation biological control is the key and most cost-effective component in an integrated pest management program designed to avoid feeding damage from cutworms and armyworms. Predators that can reduce populations of armyworms and cutworms include bigeyed bugs, spiders, minute pirate bugs, damsel bugs, lacewings and at least a dozen species of parasitic wasps. A number of insecticides that can control cutworms and armyworms are registered on alfalfa. The negative effects of application of these insecticides on the natural enemies of armyworms and cutworms should be considered when making an application decision.

Organically acceptable insecticide controls include *Bacillus thuringiensis aizawai* (Xentari™, Agree™) and Spinosad (Entrust™). Chemistries that are not organically acceptable but have proven less toxic to natural enemies include spinosad (Success™), indoxacarb (Steward™), and spinetoram (Radiant™, **Registration pending**). In my experience with these products on mint and grapes they have all proven to provide effective armyworm control when they are applied during the warmer months of summer or early fall. Consistent control has been difficult during the colder months of late winter and early spring.

The organophosphosphate insecticides chlorpyrifos, malathion, and dimethoate, the carbamate insecticides carbaryl and methomyl, and the pyrethroid insecticides cyfluthrin, cyhalothrin, lambda-cyhalothrin, permethrin, and zeta-cypermethrin are all registered on alfalfa. Under specific conditions each of these insecticides can provide effective control of caterpillar pests. The labels for each of these products should be read and followed prior to and during application.

Some of the pesticides discussed in this (publication or presentation) were tested under an experimental use permit granted by WSDA. Application of a pesticide to a crop or site that is not on the label is a violation of pesticide law and may subject the applicator to civil penalties up to \$7,500. In addition, such an application may also result in illegal residues that could subject the crop to seizure or embargo action by WSDA and/or the U.S. Food and Drug Administration. It is your responsibility to check the label before using the product to ensure lawful use and obtain all necessary permits in advance.