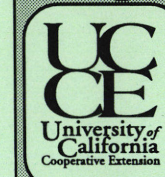


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Hay and Forage News

Alfalfa Field Day

Kearney Research and Extension Center (see map)
9240 S. Riverbend Avenue, Parlier, CA
(559) 646-6500 (for directions only)
Tuesday, September 14, 1999
8 am to noon

8-8:30 **Registration & Coffee**
8:30-9:15 **Alfalfa Variety Trial Tour**
Dan Putnam

[Then we'll move into the air conditioned comfort of a conference room at the Kearney Ag Center.]

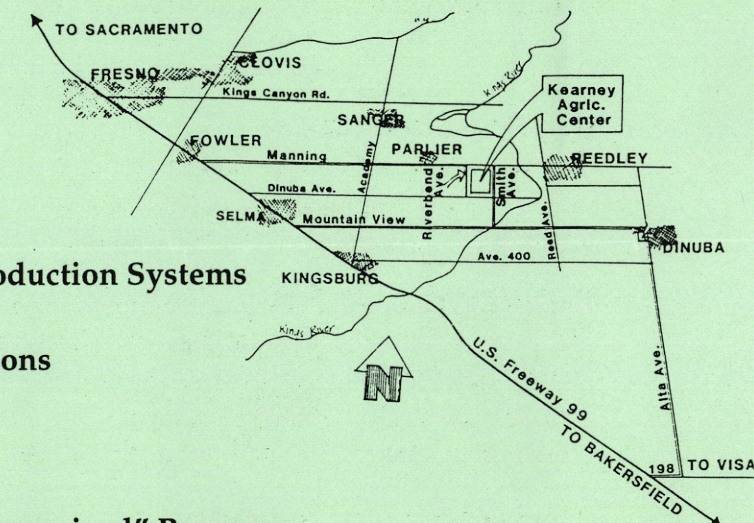
9:15-9:35 **Planting Date, Seeding Rate, & Seed Treatment Recommendations**
Shannon Mueller
9:35-9:55 **Weed Control Update**
Ron Vargas
9:55 -10:10 **Dodder Control Using Pursuit®**
Mick Canevari

10:10-10:30 **Break**

10:30-10:50 **Compost Applications in Alfalfa Production Systems**
Blake Sanden
10:50-11:10 **Water Use/Irrigation Recommendations**
Carol Frate

11:10-11:30 **Berseem Clover Trial Results**
Dan Putnam

11:30 - 11:50 **New Hay Standards and the "CA Recognized" Program**
Marsha Mathews



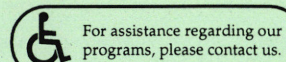
No Preregistration Required

For meeting information, call (559) 456-7261

If you have questions about the content of this publication or suggestions for topics to be included in later issues, please call.

Shannon Mueller
Shannon Mueller
Agronomy Farm Advisor

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SUMMER WORM CONTROL IN ALFALFA

Shannon Mueller, Agronomy Farm Advisor, UCCE, Fresno County

Alfalfa caterpillars, beet armyworms, and western yellowstriped armyworms are summer pests. Several growers called recently after finding worms in their alfalfa fields. The following information should help you evaluate management strategies.

MONITORING FIELDS FOR SUMMER WORMS

Caterpillars and armyworms are monitored using a sweep net. A standard insect sweep net is a 15-inch-diameter wire loop fitted with a cone-shaped net bag attached to a 26-inch handle. A single sweep consists of one 180-degree arc taken as you step forward. Hold the net vertically so that the lower rim is 1 or 2 inches ahead of the upper rim and at least 4 inches into the alfalfa. This positioning will allow you to catch any insects that fall from the plants. Take single or consecutive sweeps. In each field, take several sweeps from all quadrants, and average the total number of worms per sweep. At the very least, sample fields once a week when pests are likely to occur.

Sweep nets are available through sources such as NascoWest in Modesto (1-800-558-9595), Gemplers (1-800-382-8473 or <http://www.gemplers.com/>), and BioQuip Products (310-324-0620 or <http://www.rth.org/entomol/bioquip.htm/>).

ALFALFA CATERPILLAR

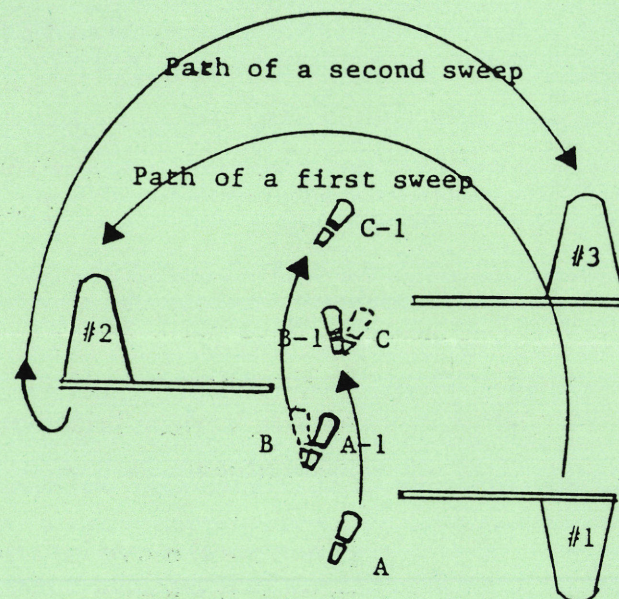
Description and Damage

The appearance of yellow and white butterflies usually gives the first clue that an alfalfa caterpillar invasion is on its way. The butterflies lay individual eggs on the leaf surface, which hatch in 3-10 days. The first generation often appears in early June.

The alfalfa caterpillar (*Colias eurytheme*) is velvety green in appearance. Full-grown caterpillars are about 1.5 inches long and have a white stripe along both sides of their bodies. Alfalfa caterpillars feed on the leaves of the alfalfa plant. The larger larvae do more damage than the smaller larvae. In contrast to armyworms, alfalfa caterpillars do not skeletonize leaves; they will consume the entire leaf, including the midrib.

Alfalfa Caterpillar Control

The treatment threshold is 10 non-parasitized, disease-free worms per sweep. A parasitic wasp (*Apanteles medicaginis*) is very effective in controlling this pest. It kills the caterpillar in its early instars and very little alfalfa is eaten. A parasitized caterpillar will die before it reaches 1/2 inch in length. To determine whether this wasp is present, simply pull the worm apart. If a shiny white larva pops out, the alfalfa caterpillar has been parasitized. Another small parasitic wasp that helps keep the caterpillar population in check, *Trichogramma semifumatum*, is an egg parasitoid.



Early harvest is usually effective in controlling alfalfa caterpillars. But if treatment is necessary, you must be sure to know which worm is in the field. Is it alfalfa caterpillar or one of the armyworms? Bt formulations will control alfalfa caterpillars, without disrupting predators and parasitoids, but are sometimes less effective for armyworm control. Timing is important; Bt's are always more effective on early instar larvae. Some of the common Bt's are Dipel and Javelin. Lock-On is also registered for alfalfa caterpillar control.

BEET ARMYWORM AND WESTERN YELLOWSTRIPED ARMYWORM

Description and Damage

Both armyworms are smooth-skinned, but their coloration and striping patterns help distinguish them from one another. In late July or early August, larvae hatch from eggs laid in clusters on the leaf surface and begin feed on the foliage of the plant, skeletonizing leaves.

The beet armyworm (*Spodoptera exigua*) ranges in color from bright green to purplish green, but is most often olive green. A dark stripe runs down the center of the back with a yellow stripe on either side. Caterpillars are full-grown in 2-3 weeks and are approximately 1.25 inches long.

The western yellowstriped armyworm (*Spodoptera praefica*) is generally blackish with two prominent orange-yellow stripes and many narrow stripes on each side. At maturity it is approximately 1.5-2 inches long.

Armyworm Control

The treatment threshold is 15 non-parasitized worms that are more than 1/2 inch in length per sweep. Natural enemies can frequently control armyworms. Important predators include bigeyed bugs, spiders, minute pirate bugs, damsel bugs, and lacewings. The two most common parasitoids are both small wasps - *Hyposoter exiguae* and *Cotesia marginiventris*.

Early cutting can effectively control armyworms if economic thresholds are reached late in the alfalfa growing cycle. Harvesting results in the death of early instar larvae by heat and desiccation and triggers the emigration of late instar larvae out of the field. Keep an eye on adjacent crops to avoid damage. Occasionally, in cool weather, armyworms do not leave the field after cutting and it is necessary to treat the stubble.

Chemical control is effective when economically damaging populations are present and it is too early to cut. Older Bt compounds will not control armyworms, but researchers report more effective control with newer materials. Most chemicals, Bt's included, are more effective on early instar larvae than on third or fourth instar larvae. Lannate (Methomyl), Lock-On, Sevin (Carbaryl), or Methyl Parathion can be used to control armyworms. When selecting chemical controls, always check the preharvest interval (alfalfa may not be cut or grazed within a specified number of days of application).

Detailed descriptions, photographs, biology, and control strategies for alfalfa pests are covered in "Integrated Pest Management for Alfalfa Hay", UC Publication 3312, 98 pp., \$22.00.

Current pest management recommendations may also be found in the "UC IPM Pest Management Guidelines for Alfalfa" available for a nominal fee in county extension offices or on the web at <http://www.ipm.ucdavis.edu/>.