Imperial County Agricultural Briefs

University of California
Agriculture and Natural Resources

Features from your Farm Advisors

June 2015

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ALFALFA CATERPILLAR MANAGEMENT IN ALFALFA

Eric T. Natwick, Entomology Advisor, UCCE Imperial County

Alfalfa caterpillar, *Colias eurytheme* is a warm weather pest with a distribution throughout most of North America. There are up to seven generations between May and October in the low desert alfalfa production areas of southern California. The adults, called alfalfa butterflies are yellow with black spots on their wings and can become abundant beginning in May and may be abundant through September. Alfalfa caterpillar butterflies flying over tall alfalfa have most likely emerged from that field and are migrating to regrowth in other fields, so treatment is usually not warranted. The lifecycle or alfalfa caterpillar is synchronized to the cutting cycle of alfalfa; developing from egg to adult between cuttings. Football shaped eggs are laid singly, standing on end, on the upper surface of leaves in fields with regrowth under 6 inches; begin checking fields for caterpillars when butterflies are present. These fields need to be checked with a sweep net for caterpillars. Larvae hatch in 3 to 10 days, grow to about an inch long and pupate in approximately 2 weeks. Alfalfa caterpillars are green with white stripes down their sides and are distinguished from beet armyworm by their velvety appearance (Anonymous 1985).

Alfalfa caterpillars consume entire leaves including the veins and midrib; large larvae are most destructive. *Cotesia medicaginis* is a small, black wasp parasitic about 0.25 inch long that attacks the alfalfa caterpillar. The wasp lays an egg inside very small caterpillars. The wasp egg hatches into a larva that consumes the body contents of the alfalfa caterpillar. Parasitized larvae are lighter in color, swollen toward the rear and somewhat shiny rather than velvety on the surface like normal healthy caterpillars. The wasp larva can be exposed by grasping the caterpillar at each end of the swelling and pulling it apart. A parasitized alfalfa caterpillar dies before it reaches 0.5 inch in length (Anonymous 1985).

Management guidelines. Cutting hay early to avoid damage is an option. However, timing of early cutting is critical to obtain satisfactory yield and to avoid serious damage. Monitor fields weekly from June through October, checking 2 to 3 times per week during periods of heavy infestations, by taking 5 sweep counts in 4 to 5 field locations. Check for *Cotesia medicaginis* parasitism. Treatment with an insecticide when field counts average 10 non-parasitized caterpillars per sweep. *Bacillus thuringiensis* (Bt) may give satisfactory control of alfalfa caterpillars without adversely affecting beneficial species, and leaves no undesirable residue on the hay. When caterpillars ingest Bt, they cease feeding, but may remain on plants 3-4 days before dying (Anonymous 2006). Some insecticides that may be used for alfalfa caterpillar control are listed in Table 1.

Anonymous 2006. UC IPM Pest Management Guidelines, Alfalfa.
http://www.ipm.ucdavis.edu/PMG/selectnewpest.alfalfa-hay.html

Table 1. Active Ingredients (AI) and Resistance Management Issues

AI, (Product)	IRAC MoA	Formulation	Rate / acre	Re-entry interval	Pre-harvest interval
Bacillus thuringiensis ssp. Kurstaki (various products)	11A			4 hours	0 days
Chlorantraniliprole (Coragen)	28	1.67 SE	3 – 5 fl oz	4 hours	0 days
Flubendiamide (Belt)	28	4 SC	2 - 4floz	12 hours	0 days
Indoxocarb (Steward)	22A	1.25 EC	6.7 - 11.3 fl oz	12 hours	7 days
Methomyl (Lannate)	1A	90 SP 2.4 LV	0.5 – 1 lb 1.5pt – 3 pt	48 hours	7 days
Methoxyfenozide (Intrepid)	18	2F	4 – 10 fl oz	4 hours	7 days

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Cooperative Extension Riverside County

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COACHELLA VALLEY FARMERS EDUCATIONAL MEETING

JUNE 17, 2015

12:00 - 1:00 p.m.

New Location! C.V. Mosquito & Vector Control District
43420 Trader Place, Indio

12:00 - 12:10 "ORGANIC FARMS UPDATE" Rod Chamberlain, Lead Supervisor, Coachella Valley Mosquito & Vector Control District

12:10 - 1:00 "NEMATODES OF AGRICULTURAL CONCERN" Antoon Ploeg, Associate CE Nematology Specialist, UC Riverside

(1) HOUR OF CONTINUING EDUCATION CREDIT HAS BEEN APPROVED

Our Sponsors will provide lunch, water, continuing education credit:
Coachella Valley Mosquito & Vector Control District
Coachella Valley Water District
UCCE Riverside County
Riverside County Agricultural Commissioners' Office

Please call Wendy @ 760-342-6437 to register, we need an accurate count to order food!

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University of California, County of Riverside and U.S. Department of Agriculture Cooperating

CIMIS REPORT AND UC DROUGHT RESOURCES

Khaled M. Bali, Irrigation & Water Mgmt Advisor, Director UCCE Imperial County
Sharon Sparks*, Imperial Irrigation District

California Irrigation Management Information System (CIMIS) is a statewide network operated by California Department of Water Resources. Estimates of the daily reference evapotranspiration (ET_o) for the period of June 1 to August 31 for three locations in the Imperial County are presented in Table 1. ET of a particular crop can be estimated by multiplying ET_o by crop coefficients. For more information about ET and crop coefficients, contact the UC Imperial County Cooperative Extension Office (352-9474) or the IID, Ag Water Science Unit (339-9082). Please feel free to call us if you need additional weather information, or check the latest weather data on the worldwide web (Google CIMIS for the current link to CIMIS site).

Table 1.Estimates of daily Evapotranspiration (ET_o) in inches per day

Station	June		July		August	
	1-15	16-30	1-15	15-31	1-15	16-31
Calipatria	0.39	0.40	0.39	0.38	0.35	0.32
El Centro (Seeley)	0.36	0.38	0.38	0.37	0.32	0.29
Holtville (Meloland)	0.38	0.39	0.39	0.38	0.34	0.31

*** Ag. Water Science Unit, Imperial Irrigation District.**

Water and Drought Online Seminar Series

The latest research-based advice on weathering a drought is now available free online. The UC Division of Agricultural and Natural Resources is working to help farmers cope with the unwelcome outcome and historically low rainfall the last three years. UC scientists, with support from the California Department of Water Resources, have recorded video presentations on high-priority drought webpages.

Each presentation is about one half hour in length and is available at the link below.

http://ciwr.ucanr.edu/

Then click on the drought resources link.

WESTERN IPM CENTER LETTER ABOUT EPA'S POLLINATOR PROTECTION PROPOSAL

Steve Elliott, Communication Coordinator, Western Integrated Pest Managementt Center

To Growers, Beekeepers, and Other Concerned Stakeholders:

EPA is seeking comment on a proposal to adopt mandatory pesticide label restrictions to protect managed bees under contract pollination services from foliar application of pesticides that are acutely toxic to bees on a contact exposure basis. **These label restrictions would prohibit applications of pesticide products, which are acutely toxic to bees, during bloom when bees are known to be present under contract.** (The proposed label restrictions will not apply to situations where contracted pollination services are not in use.) EPA is also seeking comment on a proposal to rely on efforts made by states and tribes to reduce pesticide exposures through development of locally-based measures, specifically through managed pollinator protection plans. (**More Details Below, including proposed label language and an extensive list of affected active ingredients**.)

Comments must be received on or before June 29, 2015.
You may provide comments directly to EPA at www.regulations.gov in docket EPA-HQ-OPP-2014-0818. http://www.regulations.gov/#!docketDetail;D=EPA-HQ-OPP-2014-0818

The Western IPM Center is developing a coordinated response for Western states. I will be glad to incorporate into our response any comments, concerns, feedback or relevant data from interested stakeholders. Please forward your comments to me at **jjfarrar@ucanr.edu** or contact me at 530-750-1271. Individuals may also comment directly on the public docket linked above.

Your input on this important issue affecting agriculture is strongly encouraged! We have requested a 30-day extension of the June 29 deadline, but it is not clear at this time if an extension will be granted. Links to more information are at the bottom of this notice.

Important Considerations (extracted from EPA proposal):

"EPA encourages pollination service contracts established between growers and beekeepers that take into account the increased likelihood of bee colony exposure by including provisions to ensure that colonies will be protected and pollination services secured. **If EPA receives evidence during the public comment period and/or through outreach at stakeholder meetings that such contract provisions are common or that there are other effective and mutually agreed upon stakeholder (*i.e.*, beekeeper-to-grower) practices indicating that application of acutely toxic pesticides is not of risk concern for bees under contract, then EPA will consider this evidence in determining whether this scenario needs the mitigation indicated in the proposed language.**" (From second paragraph on p 11 of the .pdf; last paragraph of section 5.2)

"EPA understands that there are some flowering crops and ornamentals that have an indeterminate period of bloom, *i.e.*, these crops flower, set fruit and continue to flower throughout the year, and that for these crops bees are present under contract for pollination services for extended periods of time. Examples of indeterminate blooming crops which involve commercial pollination services include: cucurbits, strawberries, *etc.* **EPA recognizes that the proposed prohibition on application of acutely toxic pesticides during the time when bees are present under contract may cause significant issues for the growers of these crops. Therefore, EPA requests input during the comment period on alternative mitigation approaches for these pollinator-attractive crops with indeterminate periods of bloom.**" (From p 14 of the .pdf; Section 6.4, "Indeterminate Bloom")

From EPA's Proposal, here is the **proposed Label language:**

Appendix B – Proposed Labeling

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

FOR FOLIAR APPLICATIONS OF THIS PRODUCT TO SITES WITH BEES ON-SITE FOR COMMERICAL POLLINATION SERVICES: Foliar application of this product is prohibited from onset of flowering until flowering is complete when bees are on-site under contract, unless the application is made in association with a government-declared public health response. If site-specific pollinator protection/pre-bloom restrictions exist, then those restrictions must also be followed.

From EPA's Proposal, here is the list of active ingredients that are affected by the **proposed Label changes:**

Appendix A – List of registered active ingredients that meet the acute toxicity criteria

Abamectin
Acephate
Acetamiprid
Aldicarb
Alpha-cypermethrin
Amitraz
Arsenic acid
Azadirachtin
Bensulide
Beta-cyfluthrin
Bifenazate
Bifenthrin
Carbaryl
Carbofuran
Chlorethoxyfos
Chlorfenapyr
Chlorpyrifos
Chlorpyrifos methyl
Clothianidin
Cyantraniliprole
Cyfluthrin
Cypermethrin
Cyphenothrin
Deltamethrin
Diazinon
Dichlorvos"
Dicrotophos
Dimethoate
Dinotefuran
Diuron
D-trans-allethrin
Emamectin benzoate
Endosulfan
Esfenvalerate
Ethoprop
Etofenprox
Fenazaquin
Fenitrothion
Fenpropathrin
Fipronil
Fluvalinate
Fosthiazate
Gamma-cyhalothrin
Imidacloprid
Imiprothrin
Indoxacarb
Lambda-cyhalothrin
Malathion
Metaflumizone
Methiocarb
Methomyl
Momfluorothrin
Naled
Oxamyl
Permethrin
Phenothrin
Phorate
Phosmet
Pirimiphos-methyl
Prallethrin
Profenofos
Propoxur
Pyrethrins
Pyridaben
Resmethrin
Rotenone
Sethoxydim
Spinetoram
Spinosad
Sulfoxaflor
Tefluthrin
Tetrachlorvinphos
Tetramethrin
Thiamethoxam
Tolfenpyrad
Zeta-cypermethrin

MORE INFORMATION:

A summary of EPAs proposed action is available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2014-0818-0003

The full Proposal is available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2014-0818-0002

A fact sheet about the proposal is available at: http://www2.epa.gov/pollinator-protection/proposal-protect-bees-acutely-toxic-pesticides

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