UC Cooperative Extension • Napa County

VINEYARD VIEWS

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INSIDE THIS ISSUE

NEW WEED SCIENCE ADVISOR IN NAPA COUNTY!

John Roncoroni is the new UC Cooperative Extension Weed Science Advisor in Napa County, focusing on vegetation management issues in perennial crops. In addition to working in Napa County, he will provide support to Farm Advisor programs in neighboring counties with perennial crop production including Sonoma, Lake and Mendocino counties.

John has over 20 years experience in weed science at UC Davis. From 1985-2003 he served as a research associate to UC Weed Specialist Dr. Clyde Elmore. Their work involved weed control strategies throughout California, including vineyards and tree crops, turf and ornamentals, and alternatives to methyl bromide. Since Dr. Elmore's retirement in 2004, John has been Field Research Director for the IR-4 programs at the UC Davis Field Research Center conducting residue studies for the registration of new pesticides for use in specialty crops.

In his new position in Napa County, John will work in several areas of vegetation management including conventional, sustainable and organic weed control practices, vineyard cover crops, vegetation management in riparian plant communities, and aquatic weed control in irrigation ponds.

John may be reached at the UCCE office (707) 253-4221 or at jaroncoroni@ucdavis.edu. Welcome John!

LIGHT BROWN APPLE MOTH—A NEW PEST AT OUR DOORSTEP

In February 2007, light brown apple moth (LBAM), *Epiphyas postvittan,* was discovered in the Bay Area, the first finding of this insect in North America. Subsequent surveys in March found infestations in Alameda, Contra Costa, Marin, Santa Clara and San Francisco counties. Numerous infestations have been found in the East Bay including areas around Berkeley, Albany, Richmond and Alameda. Other locations include San Francisco, Sausalito, Novato, Mill Valley, San Rafael and Palo Alto. Con-

Light Brown Apple Moth (cont.)

tinued trapping and survey efforts in April found infestations in Monterey, Santa Cruz and San Mateo counties. To date, no finds have been made in Napa or Sonoma counties.

Native to Australia, LBAM is a significant pest of grapevines there (it made the cover of the Australian version of the Grape Pest Management Manual). It is a tortricid leaf roller moth that is generally considered the most important insect pest in Australian vineyards. Larvae emerging in the spring may cause direct yield loss by feeding upon flowers and newly set berries, while the later summer generation can cause further fruit damage, particularly if hatching coincides with bunch closure. LBAM in clusters can also contribute to the development of botrytis bunch rot. In many Australian vineyards, insecticides are applied on a regular basis to minimize damage from this pest.

The California Department of Food and Agriculture considers LBAM an "A-rated" pest of high concern due to the pest's significant economic threat to agriculture. Interim regulatory measures have been established to reduce the chances for additional spread. These include quarantines and compliance agreements with wholesale nurseries in the infested areas. Monitoring for LBAM with pheromone traps is currently taking place in a 50-mile radius around known infested areas. This trapping effort includes portions of Napa and Sonoma counties.

Light Brown Apple Moth

LBAM is also found in New Zealand, Ireland, the United Kingdom and Hawaii. Its host range is broad, with more than 200 plant species known to be susceptible to attack. Major domestic hosts of concern are grapes, stone fruit (peaches, plums, nectarines and apricots), apples, pears, cherries and citrus. CDFA and USDA announced the formation of a technical working group comprised of international experts on light brown apple moth to discuss survey and mitigation strategies to safeguard against this potentially damaging pest and to prevent its further spread. CDFA and USDA will continue to work together to take the appropriate regulatory action to prevent the spread of LBAM in association with the movement of host commodities.

Additional information about LBAM is available on my website http://cenapa.ucdavis.edu/.

Recent UC Publications

Weeds of California and Other Western States

This encyclopedic yet easy-to-use 2-volume set covers 262 individual entries, including a full description of 451 species and another 361 plants compared as similar species, representing 63 plant families. **Color photos** of over 700 weeds including seeds, seedlings, flowers, and mature plants. Includes a **CD of all of the photographs from the book,** suitable for use in PowerPoint presentations – over 3000 images! **67 tables** comparing important characteristics of difficult-to-distinguish weedy species. This is a great new reference for viticulturists and anyone interested in weeds.

$100 for 2 Volumes plus CD.

Publication Number 3488.
Copyright 2007.
Volume 1: 848 pp.
Volume 2: 912 pp.

Order from UC Publications:
1-800-994-8849 or
http://anrcatalog.ucdavis.edu.

Fertigation with Microirrigation

Fertigation, the practice of injecting fertilizers through an irrigation system, is an efficient method of delivering fertilizers. With this guide in hand, you'll learn about the characteristics of selected fertilizers commonly used for fertigation, how to calculate injection rates, frequency considerations, how to apply fertilizers uniformly, mixing considerations, injection devices, and how to prevent backflow. You'll also learn about nitrogen, phosphorus and potassium distribution around drip lines and how and why to inject gypsum. This guide also discusses the environmental effects of chemical applications, and focuses on nitrogen management to reduce groundwater pollution.

Publication Number: 21620.
Copyright: 2006. 49 pp. $25.

The Home Orchard

The Home Orchard offers a comprehensive look at growing methods and some innovative practices for backyard and small-scale growers. Learn about which trees grow best in different regions and soils, varieties from which to select, preparing the soil, planting, watering and fertilizing, pruning and grafting, thinning the fruit, diagnosing problems, controlling pests, and harvesting. Special attention is given to organic and non-toxic pest management and fertilization methods. Key pests and diseases are identified and natural control methods are emphasized. Included are hundreds of photographs and diagrams that clearly show how to produce the best crops.

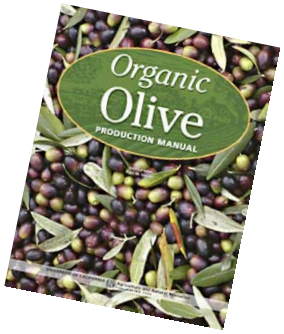
Publication Number: 3485.
Copyright: 2007. 202 pp. $25.

Great new resources from UC!

Organic Olive Production Manual

This manual provides detailed information for growers on production issues, plant nutrition, economics, pest and weed control, management of olive wastes, the conversion process, and organic certification and registration.
Using this guide you'll learn about orchard site selection considerations, irrigation needs, terrain, temperature, soil, damage from the olive fruit fly, and how these may vary for table fruit versus fruit for oil production. You'll also learn how to evaluate harvest methods—an important consideration as harvest costs typically amount to half the total production cost for olives.
This manual has been developed as a supplement to the Olive Production Manual, 2nd Edition, (3353). Organic growers are advised to consult both publications as they develop and refine their production systems.

Publication Number: 3505.
Copyright: 2007. 112 pp. $18.



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Some titles are available at the UC Cooperative Extension office in Napa.

UNIVERSITY of CALIFORNIA
Agriculture & Natural Resources

Herbicide Resistant Weeds in Napa?

John Roncoroni, Weed Science Advisor

Herbicide resistance is defined as the inherited ability of a plant to survive and reproduce following exposure to a dose of herbicide that would normally be lethal to the wild type. Resistance may occur in plants as a result of random and infrequent mutations. The continued application of a single herbicide may select for resistant individuals, eventually leading to a weed population that is resistant to the herbicide. There is no evidence that herbicide use itself induces these mutations.

To date, there have been no reports of herbicide resistant weeds in Napa County or anywhere else on the North Coast. But, herbicide resistant rigid ryegrass (*Lolium rigidum*) has been found in orchards near Chico, and resistant horseweed (*Conyza canadensis*) has been found near Fresno growing close to vineyards.

Horseweed

Both of these cases are weeds resistant to glyphosate, the active ingredient in Roundup®. However, they are not the only, or even the most widespread examples of herbicide resistance. According to the International Survey of Herbicide Resistant Weeds (see Weed-Science.com) there are 314 biotypes of weeds resistant to one or more herbicides. While Roundup® receives a lot of the attention, there are at present only 12 glyphosate resistant species worldwide. The largest group (95 biotypes) is resistant to herbicides referred to as ALS (acetolactate synthase) enzyme inhibitors. These are mainly used in rice and grain crops. But simizine, long used in vineyards, belongs to the group of Photosystem II inhibitors that comes in second on the list with 66 resistant biotypes.

Herbicide resistance is not new. The first confirmed case was common groundsel resistance to simizine in a nursery in Washington in 1970. This phenomenon became much more widespread and gained more attention in the late 80's with the use of a new class of herbicides, the sulfonylureas, ALS enzyme inhibitors that have low human toxicity and are applied at very low rates. Several aquatic weeds associated with rice production quickly developed resistance to Londax® (bensulfuron-methyl) herbicide.

Resistance appears when a weed species that has been controlled by a single herbicide for several years develops a number of "escapes" over a short time period. In the classic cases of herbicide resistance there is a portion of the population that the herbicide will kill, and another that it won't. Using the same herbicide over and over will kill all the susceptible individuals in a population while the resistant ones live. After a few years of the same practice, all that is left is the resistant population. Annual weeds that produce a large number of seeds that can germinate over a long period with little or no dormancy, are the most likely candidates for resistance. Ryegrass and horseweed are good examples.

Glyphosate is widely used in Napa County, often with multiple applications during the season. Pesticide use reports indicate that there were 4,314 herbicide applications made in wine grapes in Napa County in 2005. At least 2/3 of these applications included glyphosate. Five herbicides accounted for 98% of all applications: glyphosate (Roundup® and others), oxyfluorfen (Goal®), oryzalin (Surflan®), simizine (Princep® and others), and flumioxazin (Château®).

Willowherb

While no resistance to glyphosate has been seen in the North Coast, many growers have experienced poor control of certain weeds. Willowherb (*Epilobium brachycarpum*) is often poorly controlled, as is little mallow (*Malva parvaflora*). Rather than being cases of herbicide resistance, these weeds are less affected

The Gallery

Honeybee swarm in Carneros

Herbicide Resistant Weeds (cont.)

by glyphosate or have physical characteristics that make effective control with herbicides more difficult. Control, if any, is often limited to the seedling or very early growth stage.

There is no reason that herbicide resistance ever need occur in the Napa Valley. The keys are vigilance and continued good weed management practices. Cultural and mechanical weed control can eliminate weeds or keep them from producing seeds. Mechanical cultivators, hoe-plows, weed eaters and hand hoeing are widely used throughout the valley.

For more information on herbicide resistance, download the free UC ANR Publication 8012 "Herbicide Resistance Definition and Management Strategies" from our website: http://cenapa.ucdavis.edu. Additional information on weeds and weed control is available from the UC Weed Research and Information Center website: http://wric.ucdavis.edu.

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Get Vineyard Views via the Web!

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