



Pest Control Notes

Yolo-Solano-Sacramento Counties 70 Cottonwood Street, Woodland, CA 95695 Ph: (530) 666-8143 Fax: (530) 666-8736

Meeting Announcements

❖ UCCE Garbanzo Field Day

Where: UC West Side Research & Extension Center
17353 West Oakland Ave., Five Points, CA

When: April 25, 2006 from 9am to Noon

Topics to be addressed will include:

- Research Update: Shannon Mueller, Fresno County UCCE
- Garb Ascochyta and White Mold: Carol Frate, Tulare County UCCE
- Garb Herbicide/Weed Management Studies: Kurt Hembree, Fresno County UCCE
- Variety Trials: Steve Temple, UCCE UC Davis Campus
- Markets/Prices: Jim Melban, CDBAB

For information contact Steve Temple at 530-754-8216 or Janice Corner at 530-752-7091.

❖ UC Water Resources Coordinating Conference and Surface Water Quality Workshop

Where: Heidrick Ag History Center in Woodland, CA

When: April 26 - 27, 2006

Why: The purpose of the water resources coordinating conference is to provide a "big picture" view of water issues facing California. The Surface Water Quality Workshop will provide more specific information on what is being done to address specific water quality issues facing the state. Topics to be addressed will include:

- Statewide water issues
- TMDLs
- Irrigated Lands and Agricultural Discharge Waivers
- Pesticide Runoff and Mitigation
- Nutrient Runoff and Mitigation
- Pathogen Runoff and Mitigation

More information: The conference agenda and registration form are available online at: <http://lib.berkeley.edu/WRCA/WRC/wrcc06.html> or contact our office at 530-666-8143.

❖ UC Davis Alfalfa and Small Grains Field Day

Where: UC Davis Agronomy Field Headquarters

When: May 9, 2006 8 a.m. – 4:45 p.m.

***Bonus:** 6 CE hours offered

The University of California Cooperative Extension and Department of Plant Sciences, UC Davis, is pleased to announce the Small Grains Alfalfa and Forage Field Day to be held on the Agronomy Farm, UC Davis Agronomy Field Headquarters, Hutchison Road, Davis, CA (*directions: take Hutchison Rd. 1/3 mile West from 113 in Davis-headquarters on left*).

8:00 am: Registration

8:30 am - Noon: Small Grains Field Day

Noon - 1 pm: Barbeque Lunch (sponsored by California Crop Improvement Association)

1 - 4:45 pm: Alfalfa and Forages Field Day

ALFALFA PRODUCTION

Groundsel and Pyrrolizidine Alkaloids

(Information credited to Birgit Puschner, UC Davis Veterinary Medicine)

Groundsel has started to show up more in alfalfa fields this past month, especially with the increasing day length and persistent rains. Groundsel contains Pyrrolizidine alkaloids (PA) which can result in chronic, irreversible liver disease in animals. All stages of this plant are toxic. Cattle and horses are most susceptible to the toxic effects of PAs. Sheep, goats and small herbivores (e.g. rabbits, guinea pigs, hamsters) are resistant to PA toxicity due to detoxification processes in the liver.

Why do we see groundsel more in wet years? Tom Lanini UC Davis weed scientist suspects that the winter applied herbicides are degrading more rapidly with all the rain we've had in addition to moving it deeper into the soil. This lowers the overall concentration of herbicides in the top layers of soil where these weeds germinate, especially for those applied prior to the December rains. If applications were made after the December rains, the weeds may have been too large to be affected by the treatment since the treatment would have likely been delayed by the wet weather. A lot of groundsel seed also germinated after Paraquat applications. Alfalfa stands weakened by saturated soil conditions are also more susceptible to competition by groundsel.

Identification of PA-containing weeds (such as groundsel and fiddleneck) in alfalfa and detection of PAs in forage are important to prevent poisonings. While there is some degradation of PAs in silage, the PA content of hay remains constant over many months. Silage contaminated with more than 5% *Senecio* spp. is considered unsafe for cattle or horse feeding. Livestock animals are at the mercy of toxic plants when these plants are present in feeds or hay because they can't detect contaminated plants when dried. Hay and feed should be carefully inspected for contamination with potentially toxic weeds before the first feeding. Check your fields for groundsel, which often occurs on field margins, and separate out bales that are contaminated with this weed.

Flooded Alfalfa

Alfalfa can withstand being submerged in water for a limited time only. The amount of time will depend on the stage of growth and age of the plants. When dormant this could be 7 to 10 days and perhaps somewhat longer, but if growing, 2 or 3 days of submergence will be detrimental. For a productive alfalfa stand, there should be a minimum of 5 to 6 healthy plants per square foot.

Alfalfa plants can recover from a moderate silt deposit. However, silt deposits deeper than 2 or 3 inches will weaken the stand and will probably require some re-grading and re-establishment. Under some cases where there's not too much competition from existing plants, a heavily silted over one or two year old stand can be re-seeded with alfalfa, depending on the time of year and types of herbicides used.

For fields that flood during the winter, seed can be flown on after floods have subsided (incorporation is not necessarily needed). However, at this time of year, it's too late to plant alfalfa seed into alfalfa because of summer weed competition and longer days that promote alfalfa shoot rather than root growth so seedlings won't be very competitive. For weakened alfalfa stands, fields can also be overseeded with other forages such as oats, ryegrass, or berseem clover in the fall. However, this alters the quality and marketability of the forage.

For fields that have been treated with Velpar and Karmex, the options for dealing with weakened or lost alfalfa stands becomes difficult due to plant back restrictions (consult the labels for options). If you're in an area that has the potential to flood, consider using Paraquat in mid-winter, then TR 10 for grass weed control in February instead of the pre-emergence herbicides. Another option for flood prone areas is Roundup Ready alfalfa, because there is no soil residual activity for Roundup.

Nitrogen Fertilization

Nitrogen (N) fertilizer is generally not recommended for alfalfa production since alfalfa obtains its own N from N-fixing nodules. Although there have been reports of yield and forage quality increases with N applications to alfalfa, actual research results have been mixed (sometimes there is a yield response and sometimes there isn't). Furthermore, increases in forage quality associated with N fertilization are attributed to non-protein N and nitrate-N, both of which are poor for animal health. Weeds are also more of a problem in N fertilized alfalfa fields.

However, under waterlogged conditions, including higher water tables, alfalfa may benefit from an application of nitrogen. Nitrogen fixing nodules need air to function; under saturated soil conditions, feeder roots along with the N-fixing nodules die off, causing plants to turn yellow. Use a low rate of N (30 lbs/A) along with P and K (in areas such as the Sacramento Delta and a few class soils where K may be limiting) to help improve plant growth. Fertilizers applied to alfalfa need not be incorporated because feeder roots close to the soil surface will up take what's available and needed.

Alfalfa Diseases

During the past month UC Davis Plant Pathologist Mike Davis and I have confirmed the following diseases in alfalfa in our area:

- 1) Spring black stem: black spots and lesions on leaves and stems caused by the fungus *Phoma*.
- 2) Downy mildew: yellow or chlorotic leaves with grayish downy growth on the lower side; severely infected stems produce a bunchy, rosette-like growth at their tips.
- 3) *Stemphylium*: Leaf spot caused by a fungus that produces tan lesions on leaves.
- 4) *Sclerotinia* (white mold): fungus that produces white cottony like strands on the plants and soil.
- 5) *Pythium*: fungal disease that infects plant roots.

Established plants will usually recover from these diseases; however, seedling fields may be weakened resulting in stand losses. Diseases in alfalfa are primarily managed through plant breeding and resistant varieties. Since there aren't any fungicides registered for established alfalfa that would be very effective for disease control in this crop, the only option is to cut the field as soon as we have drier weather and to assess the stand after several cuttings (healthy stands need at least 5-6 plants/ft²). In the near future, we hope to register Pristine for *Sclerotinia* control.

Slugs in Alfalfa

During wet years slugs can build up to high populations and severely defoliate alfalfa plants. Slugs are most active at night and hide in the soil during the day. Ammonium sulfate at 500 lbs/A will provide some control of slugs (applied as a fertilizer application), but this material must contact slugs to be effective. Although this rate is not cost effective, spot treatments may be made. Furadan and Sevin 5% baits do not control slugs.

GARBANZO PRODUCTION

The unprecedented rains during March have been harmful to garbanzos because of intense disease pressure (we've had 28.4 inches since July 1 of 2005)! UC Davis Plant Pathologist Mike Davis has confirmed *Ascochyta*, *Sclerotinia*, and *Pythium* in many affected fields in our area. Garbanzo varieties susceptible to *Ascochyta* should be treated with Quadris or Headline. If more than two applications of fungicides are made to garbanzos it's important to rotate these pesticides to prevent resistance. Varieties

such as Sierra that are more resistant to *Ascochyta* are holding up fairly well, but should be carefully monitored and treated with a fungicide when disease symptoms develop. Currently we're evaluating Headline, Quadris, and Bravo for both *Ascochyta* and/or *Sclerotinia* control in garbanzos. We'll also be looking at the seed treatment Dynasty (Syngenta) for future *Sclerotinia* control in garbanzos (not yet registered in California).

Rachael Long,
Pest Management – Farm Advisor

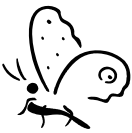
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April 7, 2006