Alfalfa Production: Molybdenum deficiency

There have been several alfalfa fields in the Sacramento area that have been deficient in molybdenum (Mo or moly), which is unusual, but not unheard of for the Sacramento Valley. Symptoms of molybdenum deficiency are like those of nitrogen and sulfur deficiency: light green or yellow, stunted plants, caused by a lack of moly that is essential for nitrogen fixation. There may be a region just south of Sacramento that may have alfalfa with somewhat low concentrations of Mo but as you go further south, Mo toxicity begins. Some low copper—high molybdenum has been documented in the Modesto and south areas.

Plant tissue testing is the only way to confirm a molybdenum deficiency. Collect plant samples from the top 6-inches or one-third of a plant sample, or from whole plant samples collected from baled hay. Plant samples with less than 0.3 ppm are considered deficient, 0.4 to 1.0 marginal, 1 to 5 ppm adequate, and 5 to 10 ppm high. Concentrations over 10 ppm may be toxic to livestock. High moly concentrations in alfalfa should be offset with copper concentrations that are twice as high as molybdenum concentrations to prevent livestock toxicity.

The most common moly fertilizer is sodium molybdate (40% molybdenum), but ammonium molybdate can be used as well. Follow the label carefully and apply during winter or before re-growth has resumed after cutting. Broadcast on the soil surface only and avoid application to any plant foliage. A single application of 0.4 pounds per acre of molybdenum should last from 5 to 15 years. Thorough records of molybdenum application times and amounts along with repeated tissue testing are essential to determine when to apply or reapply this nutrient.

Do not apply excessive molybdenum (that is double or triple coverage with the sprayer at the end of the field) because the concentration of the element in alfalfa may become so high that the forage becomes toxic to livestock. For the same reason, do not apply molybdenum directly on foliage. Analyzing the top one-third of the plant for both copper and molybdenum can detect deficiencies and suboptimum ratios of these elements in forages.

Deficiency often occurs on slightly acid to very acid soils. Increasing the soil pH increases solubility and availability of soil molybdenum.

MEETING ANNOUNCEMENTS

UC Davis Dry Bean Field Day
Thursday, August 25, 2011, 9-11:30

Hedgerow Workshop
Thursday, September 8, 2011, 7:45-Noon, Esparto

2011 Western Alfalfa & Forage Conference & Biofuels Workshop
December, 11-13, 2011, Las Vegas, NV
The University of California Cooperative Extension Service and the Department of Plant Sciences at UC Davis are pleased to announce the Dry Bean Production Field Day to be held at the UC Davis farm. There is no charge or pre-registration for this meeting. Contact Kathy Berrettoni or Rachael Long for more information at 530-666-8143 or rflong@ucdavis.edu. With Steve Temple retiring in December, this will likely be our last UC Davis dry bean field meeting, as his position will not be replaced.

Directions to farm: Take Hutchison Dr. approximately 1.5 miles west from Hwy 113, in Davis. Turn south on Hopkins Lane, then turn east on a dirt road with a row of olive trees; park along the fence. The field is located across from the Bee Biology Center.

Agenda
9:00–9:10   Sign in, introductions, updates, R. Long, Farm Advisor, Yolo County
9:10–9:20   Dry bean production update, P. Gepts, Professor, Plant Sciences, UC Davis
9:20–9:30   Garbanzo testing/increase, S. Temple, Grain Legume Breeder, UC Davis
9:30–9:40   Cover crop cowpeas, S. Temple
9:40–9:50   Lima nitrogen study, R. Long and R. Meyer, Extension Specialist Emeritus, UC Davis
9:50–10:00  Cranberry breeding, S. Temple
10:00–10:20 Lima IPM: Haskell vs. Mexcla, L. Godfrey, Extension Specialist, Entomologist, UC Davis
10:20–10:30 Large and baby lima breeding, S. Temple
10:30–10:40 US Coop Dry Bean Nursery, S. Temple
10:40–10:50 Beija-Flor bush baby breeder lines, S. Temple
10:50–11:05 Cowpeas, J. Ehlers, Plant breeder, UC Riverside and S. Temple
11:05–11:15 Foundation Seed update, S. Temple
11:15–11:30 Discussion

2011 Western Alfalfa & Forage Conference
& Biofuels Workshop
Las Vegas, Nevada December 11-13, 2011

Please take advantage of the EARLY BIRD REGISTRATION at: http://ucanr.org/sites/Alfalfa_Forages/ for details of the program, housing and registration. This conference is organized by the Cooperative Extension Services of 11 western states.

Description: This is an interesting year for forages to say the least. Prices are at record high levels in many states, but dairies have found it difficult going as a result, and costs have gone up considerably for hay and dairy producers alike. There are many challenges in the farming community, and there is strong interest in alfalfa, corn silage, and alternative forage crops. Growers and industry members are interested in new products and ideas for saving money. This conference features about 35 speakers from many states who will present some of the latest information on economics, pest management, irrigation & soils, quality, utilization and genetics. We have a special session on corn silage/alternative forages, forage quality, and on Roundup-Ready and Genetically-engineered crops. A pre-conference agricultural tour will take place on December 11, the Forage conference on Dec 12-13. A Biofuels Workshop for Western States will take place on December 13. We expect to have 50-60 exhibitors focused on alfalfa & foragecrops (alfalfa, corn silage, miscellaneous hays and biofuels).
A WORKSHOP ON:

INSECTARY HEDGEROWS
Hedgerows for pollinators and beneficial insects

Thursday, September 8, 2011
7:45am-Noon
Esparto, California

TOPICS WILL INCLUDE:
- Incorporating hedgerows into a farming operation
- Funding incentives for hedgerow installation
- Benefits of native pollinators on crop production
- Attracting beneficial insects to farm edges
- Selecting plants to maximize insectary habitat
- Incorporating forbs into hedgerows
- Achieving a successful installation

To register and for directions, please contact Sheila Pratt at
pratt@yolorcd.org or (530) 862-2037 ex. 117

WORKSHOP AGENDA

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>7:45-8:00am</td>
<td>Arrival and Sign-In</td>
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<tr>
<td>8:00-8:05am</td>
<td>Welcome: Yolo County Resource Conservation District (RCD)</td>
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<td>8:05-8:20am</td>
<td>Farming with Hedgerows: John Stephens of Oakdale Ranch</td>
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<tr>
<td>8:20-8:30am</td>
<td>Cost-Share Opportunities and Technical Support: Natural Resource Conservation Service (NRCS)</td>
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<td>8:30-9:00am</td>
<td>Beneficial Insects in Hedgerows: Rachael Long of UC Cooperative Extension</td>
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<tr>
<td>9:00-9:30am</td>
<td>Hedgerows for Native Bees: Contributions to Crop Pollination: Jessa Guisse of Xerces Society</td>
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<td>9:30-10:15am</td>
<td>(Break) Walking Tour of a Mature Hedgerow</td>
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<td>10:15-10:45am</td>
<td>Site Preparation, Installation, and Maintenance: Jeanette Wrysinski and Heather Crowell of Yolo RCD</td>
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<td>10:45-11:15am</td>
<td>Shrubs and Trees for Insectary Hedgerows: Taylor Lewis of Cornflower Farms</td>
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<td>11:15-11:45pm</td>
<td>Wildflowers for Pollinators: John Anderson of Hedgerow Farms</td>
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<tr>
<td>11:45-12:00</td>
<td>Installing and Maintaining Forb Strips: Jessa Guisse</td>
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<tr>
<td>12:00-12:30pm</td>
<td>(Optional) Informal Discussion and Networking</td>
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Dry Bean Production: Alfalfa Mosaic Virus (AMV)
With the high aphid counts in alfalfa this spring, you may find this disease in dry beans this year. Alfalfa is an important perennial host for Alfalfa Mosaic Virus that is vectored by aphids. Several years ago Alfalfa Mosaic Virus was problematic in limas in the Stockton area. Symptoms of alfalfa mosaic in beans vary depending on the strain of the virus. Some strains cause only localized symptoms that may include necrotic spots on infected leaves. Other strains infect the entire plant and cause symptoms ranging from yellow dots to a striking yellow mottle, which may be accompanied by leaf and pod distortion and stunted plant growth. Alfalfa mosaic virus has a wide host range and is transmitted from plant to plant by various aphids. Alfalfa mosaic is a minor disease of beans in California and warrants no control measures. Growers should plant certified seed and may want to avoid planting bean fields adjacent to alfalfa fields.


2011 Sample costs to produce sunflowers for seed in the Sacramento Valley
2011 Sample costs to produce safflower, irrigated-bed planted and dry land-flat planted

I hope to see you at our upcoming meetings. For more information, please contact me at (530) 666-8734 or rflong@ucdavis.edu.

Sincerely, Rachael Long, UCCE Farm Advisor

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Pest Control Notes

August 12, 2011