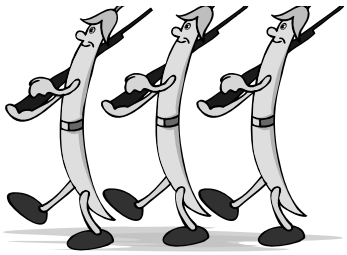
Cooperative Extension, University of California

February 16, 2007

Pest Control Notes

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



Tri-County Bean Production Meeting

San Joaquin - Stanislaus - Sacramento

Date: Thursday, March 8, 2007
Time: 8:30 a.m. to 12 noon, followed by lunch.
Location: Jorge's El Tapatio Mexican restaurant is located in downtown Tracy.
572 W. 11th Street, Tracy, CA 95376

8:30-9:00 **Registration**

9:00 - 9:20 **BMPs for Beans**. **Water quality protection in row crops.**
Rachael Long, UCCE Farm Advisor, Yolo, Solano, Sacramento County

9:20 - 9:40 **Variety Update**
Steve Temple, Plant Sciences Extension Specialist, UC Davis

9:40 - 10:00 **Bean Problems encountered during the 2006 season.**
Jan Mickler, UCCE Farm Advisor, Stanislaus County

Break

10:15 - 10:35 **Lygus Control in Limas. Is sweeping an accurate method for lygus?**
Larry Godfrey, UC Extension Entomologist, UC Davis

10:35 - 11:00 **Review of Bean Research. Lygus tolerant varieties, spider mites and weed control**
Mick Canevari, UCCE Farm Advisor, San Joaquin County.

11:00 - 11:20 **How to raise 50 CWT Blackeyes**
Carol Frate, UCCE Farm Advisor, Tulare County.

11:20 - 11:45 **The diversity of beans**
Paul Gepts, Professor and Geneticist, UC Davis.

Adjourn Lunch will be provided.

The restaurant is located 5.3 miles from the I-5 exit on 11th Street. If you reach Tracy Blvd you've gone too far.

2 hrs of continuing education credit is requested. Hope to see you there.

ALFALFA PRODUCTION

Although this winter has been dry, the following trial results should help assess how to manage water stressed alfalfa fields in future wet years. This study was conducted in Yolo Co. on heavy ground in the spring of 2006, with Dr. Meyer, UCD Plant Sciences Dept. The first full cutting was nearly lost in this trial due to excess rainfall, as the first harvest is usually cut between April 1st and 15th.

Evaluating whether nitrogen will enhance water stressed alfalfa stands

A trial was conducted in Yolo County in 2006 to determine whether a 2-year old alfalfa stand would benefit from an application of nitrogen (N) to try to increase stand productivity after a particularly wet spring (March-May rainfall of 10-inches when the average is 3.8). Urea at 30, 60, 90 lbs of N per acre as well as ammonium sulfate (60 lbs of N) and 16-20-0-14 (30 lbs of N and 38 lbs of phosphorus) were applied to replicated research plots before the first alfalfa harvest in the spring when there was standing water in the field (Fig. 1). A separate trial was conducted with the same treatments in an adjacent irrigation check in the same field and applied before the second harvest (Fig. 2).

Results

The results of the trials are described in Figures 1 and 2 below. There were no statistically significant differences in yields between any treatments, although there were some trends for slightly higher yields where nitrogen was applied. However, the high costs of fertilizers relative to the alfalfa yield gained did not justify the application in our study (based at $120 per ton for the crop, Fig 3).

Recommendations

During wet years, even when alfalfa fields look extremely yellow from saturated soils, our results suggest that growers should not fertilize with nitrogen (N) to try to improve their alfalfa stands. In the case of the alfalfa field where we did our trial, the standing water severely affected stand health via root rot diseases and the addition of fertilizers did not help the stand recover as evidenced by the lack of significant yield response in either the first or second cutting. In wet years where there is standing water in a field causing alfalfa stress, an application of N is costly without clear benefits in yield gains. When alfalfa is stressed from too much water, the plants are looking for air, not N.

When the rains stop and the soils begin to dry, the alfalfa will be able to start growing again and the rhizobium bacteria that fix the nitrogen will be able to supply the needed N for rapid alfalfa growth. Plant tissue sampling can then be used to determine if phosphorus (P), potassium (K), and sulfur (S) are adequate. Soil sampling can also be used for detecting if P and K are needed but not S. Keep in mind alfalfa growth responses usually do not appear until 60-90 days after P and K applications are made.

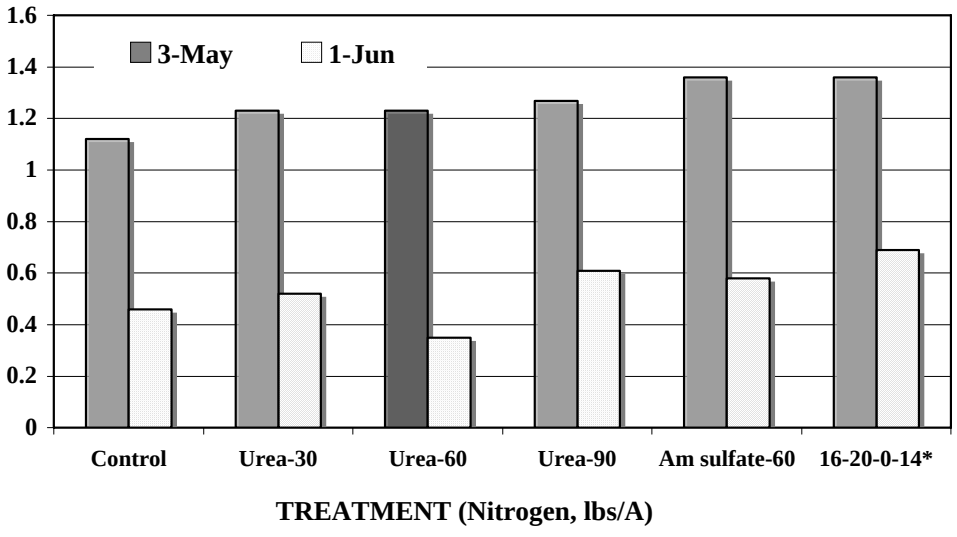


Figure 1. Fertilizer treatments were applied April 13, 2006 (with standing water on the soil surface) and alfalfa was harvested on May 3rd and June 1st. Yields are in tons/acre for 100% dry matter. There were no significant differences in yields between treatments for either harvest date. Low yields in the second harvest are due to stand decline from standing water.

Figure 2. On May 15, 2006 another set of the same fertilizer treatments was applied to another trial adjacent to the above trial in the same field. It was also harvested on June 1, 2006. Yields are in tons/acre for 100% dry matter. There were no significant differences in yields between treatments.

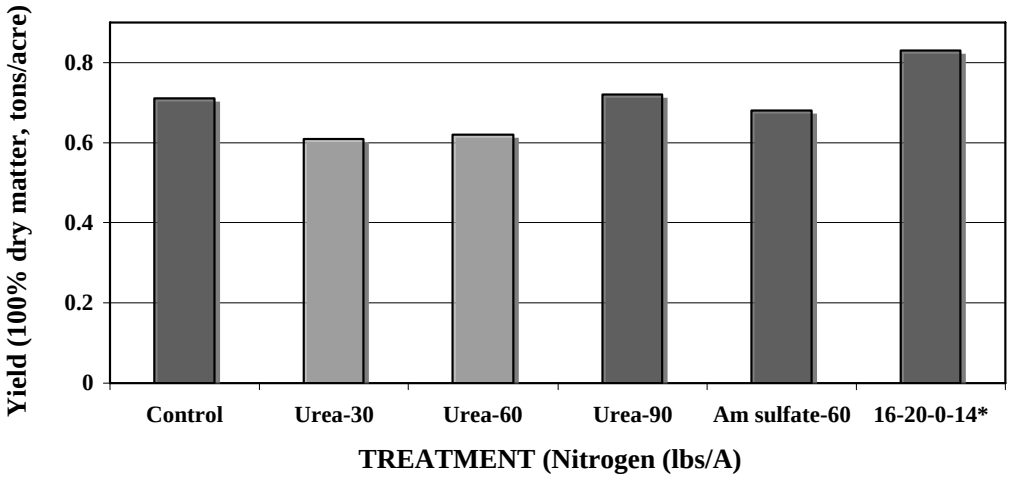
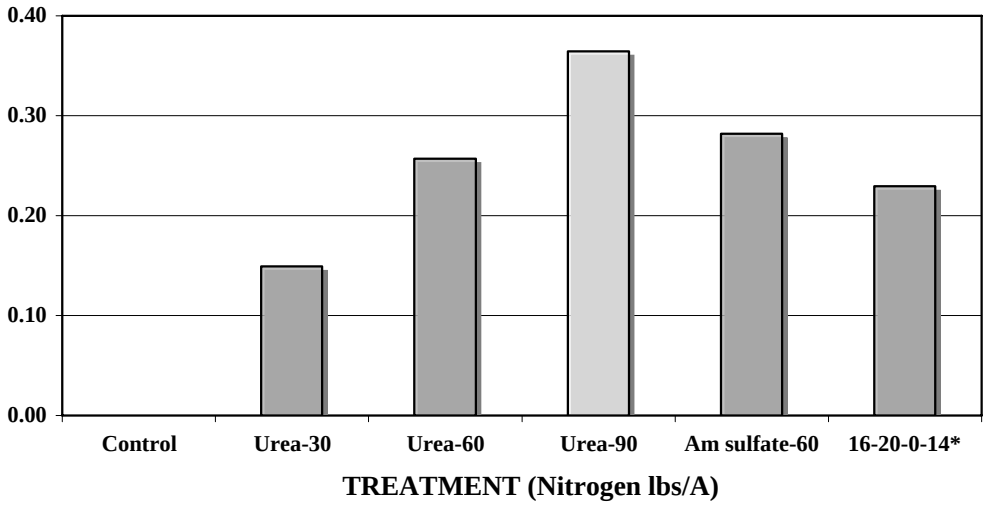


Figure 3. Yield (tons/acre) required to justify a fertilizer application with hay prices of $120 per ton.

Note: on all graphs, *16-20-0-14: 30 lbs of nitrogen and 38 lbs of phosphorus.



Frost Prevention in Orchards *(information from Fruit and Nut Notes, W. Reil)*

Although we don't want to think about frost during the spring, there are a few cultural practices that can help minimize potential frost damage in orchards. Sometimes a one or two degree difference in temperature can mean a lost or saved crop. The following chart shows approximate temperature differences that can be expected under various orchard floor management practices. All conditions are compared to bare, firm, moist ground. Tall vegetation or weed growth is the coldest condition possible but very loosely disked soil is not too much warmer. Strip weed control down the tree row will provide warmer conditions in proportion to the area without vegetation. For example, if 25 percent of the total area is bare and 75 percent has a high cover crop, the orchard will be 1½ to 2º colder than bare, firm, moist ground.

Ground Preparation	Temperature Change
Bare, Firm, Moist Ground	Warmest
Shredded Cover crop, Moist Ground	½ºF cooler
Low Growing Cover crop, Moist Ground	1 to 3ºF colder
Dry, Firm Ground	2ºF colder
Freshly Disked, Fluffy Ground	2 to 3ºF colder
High Cover crop	2 to 4ºF colder
High Cover crop Restricted Air	6 to 8ºF colder

Website information:
Rest assured that the poisonous brown recluse spider is rarely found in California. The adult brown recluse spider is small, fitting on a dime, with a distinct violin-shaped mark on its back. The see where this spider occurs in the US, visit: http://spiders.ucr.edu/images/colorloxmap.gif

Cost of production studies available online at: http://coststudies.ucdavis.edu
Alfalfa production information: http://alfalfa.ucdavis.edu
Dry bean production information: http://groups.ucanr.org/beans

Publications
NEW! Weeds of California and Other Western States, 2007, Vol. 1 and 2, by J. DiTomaso and E. Healy, UC Davis, pub. #3488 available online at http://anrcatalog.ucdavis.edu, or from our office.

The UC Alfalfa Hay Production Guide for California is finally nearing completion (includes 28 chapters)! This should be available for the industry later this year.

Mark your calendars: UC Davis Small Grains and Alfalfa/Forage Field Day, Wed., April 25, 2007

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