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University of California Cooperative Extension • Tulare County

Field Crop Notes



Volume II, Issue 7

October 05

35th Alfalfa and Forage Symposium to be held in Visalia, December 13 & 14, 2005.

The Symposium was last held in Visalia in 1997. This is a great opportunity to hear the latest on alfalfa and forage research in California without having to travel or pay for hotels! In addition, a field trip to see the DeBoer Family Friesian horses, the Heritage Museum and AgVentures, Hilarides Dairy, and Four Sisters Cheese will be held the day before on December 12th. The agenda for the meeting and information on registration are included at the end of this newsletter.

The Future is Here!

Roundup Ready alfalfa received approval for commercial fields this summer and limited amounts of seed are available for planting this season. My colleague Steve Wright and I conducted a trial looking at different herbicide regimes in Roundup Ready alfalfa for the past two seasons. We didn't compare Roundup Ready alfalfa to conventional alfalfa but looked at different herbicides, comparing registered materials to Roundup. The alfalfa we were working with was not yet a commercial variety but did yield respectively (total of 7.0 tons/acre for 6 cuttings in 2004 (May through November) and 10.6 tons/acres for 5 cuttings in 2005 (also 5 cuttings; some with long cutting intervals).

The trial was planted in March of 2004 after the main rains had finished. Emergence was a challenge as some of the seed came up with moisture but water had to be added to get the remainder of the seed up. We were left with some alfalfa that was 3 to 4 trifoliolate leaves,

some in the cotyledon stage, and some not yet emerged at the time that weed control had to be started. This was a situation where Roundup Ready technology really shined as we could apply Roundup and not worry about the size of the seedlings or soil residual while still getting control of a broad spectrum of broadleaf and grass weeds.

Once the crop was established, weed pressure was fairly light for the rest of the trial. Conventional herbicides such as TR-10, Zorial, Prism and eptam provide good control of weeds. For controlling weeds in areas around the edges of the trial and in a large spot in the center of the trial in which the alfalfa had been killed by Phytophthora root rot, the ability to make repeated Roundup applications without having to be concerned about damage to nearby alfalfa came in handy.

Growers deciding on whether or not to plant Roundup Ready alfalfa seed need to weigh the costs of seed vs. the benefits of a weed control system in which the herbicide can be applied at anytime in the season, the weeds appear before an application is needed, and one material gets *most* weeds. However, there are some broader issues that should also be considered. First there are weeds that Roundup either does not control or that are hard to control. These include some common weeds found in alfalfa such as lambsquarter (*Chenopodium album*), cheeseweed (*Malva parviflora*), and burning nettle (*Urtica urens*). Repeated use of Roundup in the same field on multiple crops (cotton, corn, alfalfa) can lead to the development of resistant weeds. For example, it is now documented that there is Roundup resistant horseweed (marestail) in the county. Roundup Ready technology should be considered another tool in weed management and not the only strategy to be used.

Seeding Rates for Stand Establishment

When planting alfalfa, the goal is to have 20-50 plants per square foot once the crop has emerged. However, if there are 12 seedlings/sq. ft. and they are distributed well, the stand is considered adequate. From seeding rate trials, we know that by the end of the first harvest season the number of plants per square foot, regardless of the density after crop emergence, will be roughly the same for different seeding rates. This is because seedlings compete with each other and there is a natural thinning out process. Stand counts after the first harvest season tended to range from 10 to 19 plants per sq. ft. in trials even when counts after emergence were 30-40 plants per sq. ft.

There are from 200,000 to 250,000 seeds in a pound of raw alfalfa seed. Roundup Ready seed has 8% fewer seeds per pound than raw seeds because these seeds have a light coating applied to them. In addition, about 5-10% of the Roundup Ready seedlings will be killed with the first application of Roundup because there is a small percentage of seed that does not have the Roundup resistance gene. Traditional coated seed has about 1/3 fewer seeds per pound than raw seed.

At a seeding rate of 25 lbs/acre of raw seed, there would be about 129 seeds per sq. ft., which should be plenty if the seed bed is good and weather cooperates. That same seeding rate with Roundup Ready seed, given 8% fewer seeds, would give 119 seeds/sq. ft. Then there could be up to a 10% loss with the first Roundup application. With traditional coated seed, the number of seeds would be about 86 seeds/sq. ft. at a 25 lb/acre planting rate.

Fifteen pounds of raw seed per acre can be sufficient for a successful stand under ideal conditions. Under good conditions, 22-25 lbs seed/acre should be sufficient for a good stand. Consider increasing seeding rates if the seedbed is rough, moisture is marginal, soil has salinity problems, or other adverse conditions exist.

Be sure to calibrate the planter. Raw seed flows through a planter differently than coated seed. Don't wait until after the field is planted to figure how much seed was being applied per acre.

(The above article is based on a presentation by UCCE Fresno County Farm Advisor Shannon Mueller at the September 14, 2005, Alfalfa Meeting, Kearney Ag Center).

Minimize Corn Stunt in 2006 – Destroy Volunteer Corn

Volunteer corn coming up after harvesting silage or grain corn can be a bridge that helps corn leafhoppers, and thereby the corn stunt organism, survive winter. The more leafhoppers and disease that make it through the winter months, the more risk for corn stunt next spring and summer. The same applies to late harvested corn fields. The earlier corn is harvested and the more corn volunteers that are destroyed, the better off next year's crop will be.

35th California Alfalfa & Forage Symposium

Visalia Radisson, Visalia, CA – December 12-14, 2005



Monday, December 12, 2005

10:00 a.m. – 5:00 p.m. Agricultural Tour of the Lower San Joaquin Valley

Visit the heart of California's alfalfa production and dairy region – agricultural sites of interest including Friesian Horses, Heritage Museum, dairy farm, cheese making, alfalfa and winter forage production. For further details, see website. Includes lunch and returns about 5:00 p.m. Space is Limited, so sign up early, first- come first-served.

Tuesday, December 13, 2005

Main Session – Industry Trends and Environmental Issues (8 am to 10 am)

Alfalfa supply and demand situation – Bees Butler, UC Davis, CA

Critical issues facing the dairy industry – Mike Marsh, Western United Dairymen, Modesto

Air quality issues with the dairy forage system – Frank Mitloehner, UC Davis

Implications of deficit irrigation management of alfalfa – Steve Orloff, UCCE, Yreka, CA

Main Session – Industry Trends and Environmental Issues (continued) (10:30 to noon)

Recycling manures using forage crops – Marsha Mathews, UCCE Advisor, Modesto, CA

Central Valley waivers and forage crops – Allan Fulton, UCCE Red Bluff, CA

Groundwater protection areas and Forages – Larry Schwankl, UC Davis

12:00 Banquet Lunch (raffles and awards)

Breakout Session I. Pest Management (1:30 – 5 pm)

Problem weeds in hay and forages for livestock—Birgit Puschner, UC Davis

Stand establishment: Round-Up and other herbicides—Mick Canevari, UCCE, Stockton, CA

Controlling weeds in established alfalfa —Ron Vargas, UCCE Madera, CA

Sclerotinia in alfalfa: biology and control – Carol Frate, UCCE, Tulare, CA

BREAK

Biological control of weevils; current status – Karey Windbiel, UC Davis

Controlling weevils in alfalfa – Larry Godfrey, UC Davis

Control of beet armyworm & alfalfa caterpillar – Eric Natwick, UCCE, El Centro, CA

Rodents and their control – Terry Salmon, UCCE, San Diego, CA

New insect threats to California forages – Charlie Summers, Kearney Ag Center, Parlier, CA

Breakout Session II. Producing High Quality Forages for Dairy Systems (1:30 - 5 pm)

Winter forage options for dairy systems – Gene Aksland, Resource Seeds, Visalia, CA

Utilizing the BMR trait in sudangrass and sorghums– Jon Reich, Cal West, Woodland, CA

Cool season annual and perennial grasses – Devesh Singh, Barenbrug USA, Tangent, OR

Current status of elephantgrass as a potential forage crop – TBA

BREAK

Changing role of forage fiber in dairy rations – Peter Robinson, UC Davis, CA

Harvesting silage corn at the right time – Roger Vinande, Pioneer Hi-Bred, Modesto, CA

Monitoring phosphorus for alfalfa production – Jerry Schmierer, UCCE, Colusa, CA

Producing organic alfalfa – Rachael Long, UCCE, Woodland, CA

5:00-6:30 pm

Exhibitor Mixer: Refreshments and Cash Bar

Wednesday, December 14, 2005

6:30 a.m. Complimentary CAFA Breakfast (See CAFA booth for tickets.)

Main Session – Forage Quality (8 – 10 am)

Diurnal changes in forage quality – Hank Mayland, USDA-ARS, Kimberly, ID
What are you missing with your hay quality tests? – Mary B. Hall, USDA-ARS, Madison, WI
Balancing quality and yield using cutting schedules and varieties – Dan Putnam, UC Davis
Postharvest changes in alfalfa quality– Alan Rotz, USDA-ARS, College Park, PA

Main Session – Forage Quality and Genetic Engineering (10:20 am – noon)

Establishing a top-notch alfalfa stand – Shannon Mueller, UCCE, Fresno, CA
Do GE crops impact animal health and food products?—Alison Van Eenennaam, UC Davis
Coexistence of GE and non-GE alfalfa – Dan Putnam, UC Davis
Reinventing alfalfa – future innovations for alfalfa – Neal Martin, Madison, WI

12:10 Adjourn

6 PCA Hours (5 “other” and 1 “laws and regs”)

10 CCA Hours (0.5 Nutrient and management, 1.0 Soil and water, 2.5 IPM, 4.0 crop management, 2.0 Professional development)

For meeting registration, see <http://alfalfa.ucdavis.edu> or use the form below.

Make your hotel plans now at the **Visalia Radisson: 559-636-1111** or **800-333-3333, \$89 Conference Rate.**



35th California Alfalfa and Forage Symposium – Registration Form

Please complete one form per person attending.	Name
Company/Ranch	Address
City, State, Zip Code	Phone Fax
E-mail (important) Confirmation by E-Mail only	<input type="checkbox"/> Pre-Symposium Tour \$40.00
<input type="checkbox"/> Pre-Registration (before 12/1/05) \$125.00	<input type="checkbox"/> Late Registration (after 12/1/05) \$160.00
<input type="checkbox"/> Single Day Registration \$100.00 (circle 12/13/2005 or 12/14/2005)	
<input type="checkbox"/> Guest Banquet Lunch Ticket \$27.00	
<input type="checkbox"/> Additional Copy of Proceedings @ 12.00 ea. (one included with registration)	
<input checked="" type="checkbox"/> Register online go to our website at http://alfalfa.ucdavis.edu .	
Mail your check, made payable to “UC Regents,” to Janice Corner (jcorner@ucdavis.edu or 530-752-7091), Department of Plant Sciences, PRB, MS-5, UC Davis, Davis, CA 95616-8780.	

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Carol Frate
Farm Advisor