New Mexico State University
Extension Plant Sciences

# Alfalfa Market News

New Mexico State University • Cooperative Extension Service • U.S. Department of Agriculture

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**Inside this issue:**


| | |
|---|---|
| Final Cuttings are Dispersed and Difficult to Finish | 1 |
| Its All in the Seed for Success | 1 |
| Hay Stocks May Be Lowest on Record | 2 |
| Optimize Your Bag and Bunker Operations | 3 |
| Density Demands Careful Management | 3 |
| Limit Mold Growth in Hay | 4 |
| Pasture Management Doesn't Stop During the Winter | 4 |
| Western Alfalfa and Forage Conference | 5 |
| Cotton Harvest Tricky this Year | 6 |
| Current Crop Conditions | 6 |


## Final Cuttings are Dispersed and Difficult to Finish

**Farm Hay Prices—October 19th** **Price ($) per ton or by bale**

| County | Contact | Premium Hay ($/ton) | Top Quality Hay ($/ton) | Other Hay ($/ton) | Contract ($/ton) | Cut Complete | Market Activity |
|---|---|---|---|---|---|---|---|
| **Chaves** | Sandra Barraza, County Agent | $200 small, $175-165, large, not delivered. Much sold out. | $160-120. Some held back for winter sales. | $110-100/ton for oat hay The 4th cut was wet so the 5th cut was very difficult. | Varies. Some rain scattered in region. | 100% of 5th, 35% of 6th where can cut still. | Good. |
| **Dona Ana** | John White, County Agent | $5.00-7.00 small/heavy, $180-200 per ton. | $165-175/ton delivered, $5.00-4.50 for small bale. | $1750or less, round bales $75, small at down below $4.50 to $3.50 on black. | $3.00 to $7.00 small, $135-190 or more contract | 100% 6th cut, 90% of 7th cut. | Strong. |
| **Eddy** | Woods Houghton, County Agent | $200 per ton small; $175-big bale. | Light striped, $180 small, $160 big bale. | Stiped at $170 small, $150 large bale. | Varies. Alfalfa caterpillar, army worm complex, cutworms seen. | 100% of 6th cut, and 65% of 7th cut. | Strong. |
| **San Juan** | Gary Hathorn, County Agent | $200-180 per ton pricing currently. Demand good. | $180-150 per ton. Scattered showers making quality at premium pricing | $145-90 per ton. | Varies. 3 inches of rain over last 30 days. | Cuts complete | Good. |

*Pricing currently on hay supplies is fluctuating greatly. Some quality small bales are commanding as much as $235 a ton and where race track supplies were limited some small bales were as much as $14 each. In Houston, TX some supplies are $20 a small bale.*

## Its All in the Seed for Success

***Statewide***. The future of the seed and agricultural industry appears to be pulling into an initial package presentation with purchase of the seed. More options on seed treatments and additions as well as the advancing seed technology is placing more emphasis on purchasing seed with all the options. Seed can now be biotech (such as Roundup-Ready alfalfa) with fungicide and rhizobia in place on the seed as well as possible pop-up fertilizer coated on the seed to be either temperature or moisture released. While most don't choose all of these options, future seed purchases will have options that will have to be carefully considered in order to figure out if the option is worth the cost or not across individual fields. Already some companies offering seed are presenting many of these options for producers. In one feed and fertilizer business in Illinois, the company has gone from treating zero percent of seed sold to treating nearly 25 to 30 percent of the seed, particularly on soybeans. Seed treatments alone seem to be gaining momentum as an option that is considered by farmers because the protection given to the emerging plants in less than ideal climate and soil conditions can be protected a bit longer with a better chance at stand establishment and development. Seed treatments have been proven to be very effective at protecting plants against certain insects and fungi. The convenience of using seed treatments combined with the return on the investment is another reason some farmers are opting for seed options that add to the cost of seed but pay out in the long run. However, some of the retailers are facing some challenges in this new avenue for seed options. Some are having trouble finding the manpower to sell seed treatments and to even operate the seed treatment equipment. They also may have difficulty meeting manufacturer requirements and even in convincing growers they should invest in seed treatments, and with alfalfa and soybean seed, in particular, finding the right combination of effective fungicide and rhizobia mix that helps and doesn't limit effectiveness of the options is necessary. Despite these hurdles, some of the seed companies think incorporating seed treatment options into seed sales is ideal. Although the seed treatment equipment is a large capital investment for many local companies, some are finding that once employees are trained and the market analysis shows that the use of treated seed continues to increase in demand, the investment in time, training and equipment can be worth it. By tracking and comparing yield data, growers too have seen what seed treatments can do for them in stand establishment and yield responses. Usually seed treatment options can pay off if field situations are such that: planting can be delayed due to soil that is overly cool or dry; if planting moderate to poor quality seed is required due to seed supply limitations; if planting the same crop in consecutive years on a field; if planting no-till or minimum-till into stressful conditions; planting in fields with a history of disease or insect problems; and growing crops for top quality seed production.

**Alert! Alert! Alert! Alert!**

***♪Stack in winter 2006-2007 hay supplies, less hay is expected to be available this year.***

***♪ Prepare for pecan and cotton harvest. Rains have hampered an early harvest so have equipment ready to roll for harvest without problems.***

***♪ Continue controlling fall weeds from earlier showers. In particular, watch and control any London rocket or mustards. Cool nights have excess cool-season weeds appearing.***

***♪ Check stand establishment on any fall planted alfalfa to insure moisture has provided a better than normal stand up and healthy.***

***♪ Grain sorghum harvest will be starting and some areas have some excellent yields. The newly broken out land (into second year of row cropping) south of Portales looks excellent even with the early hot and drought.***

***♪ Fall lettuce and cabbage is rolling out of the fields and supplying some needs from scare in California as well as demand in Mexico.***

***♪ Check wheat fields for insect and any possible disease problems as well as stand establishment. Winter grazing pricing could be good this year due to limited forage in surrounding states.***

***♪ Much of the peanut production is out of the fields with the processing plants going full bore—some limited disease problems late with the rains hampered some harvest operations but now are finishing up.***

***♪ Onions planted for June harvest may see good prices next year as some fields were difficult to get planted with scattered rains this fall.***

***♪ Watch cotton fields carefully for either full boll opening or hard freeze in order to quickly Pix and harvest. Rains and scattered hail in southern New Mexico has harvest delayed and some cotton is tagging. A hard freeze could hasten harvest.***

***♪ Finish last clean-up tillage operations where needed to prepare fields for next spring planting.***

## Hay Stocks May be Lowest on Record

***Nationwide.*** Drought throughout much of the eastern and northern United States this last summer has some thinking that the national hay stocks may be the lowest on record by the end of this winter. The director of the Livestock Marketing Information Center, Jim Robb, recently remarked that hay prices, on balance nationally, could remain very high this winter and, probably, record-high for this crop year. One indication of this trend is that although hay is generally grown as a regional commodity, it is moving further distances this year in order to provide feed in the areas hardest hit by drought this year. This may mean also that herd liquidation could also continue in some areas. Although there was a very large beef cattle slaughter in August and that was continued in September, the numbers seem to be slacking off into October. Indeed, large cow culls this summer has slowed the pace of the national beef cow herd, but this will also mean that prices may also be building both for cattle and for hay supplies. Most forecasters agree that prices won't be coming down soon this year for either cattle or hay. Wheat pastures that recently have been saved by some timely rain in both the southeast as well as in areas of the southwest will also help maintain herds over the winter. Right now in New Mexico, both pasture and rangeland as well as wheat pastures are looking fairly good—especially considering the difficulty our neighbors are having in finding rain. Also, as far as feed yards and dairies are concerned, the larger than expected corn crop in the Midwest may also help build cattle numbers and keep input costs lower than expected. Even with the increased demand for corn for ethanol production in these central United States regions, there is enough production to favor somewhat inexpensive corn and soybean meal as well as some cottonseed supplies once cotton harvest is in full swing. Indeed, New Mexico is faring better than many areas in the United States. Within the central portion of the United States reports show that cattlemen have had to start being very creative in finding feed. They are even using more of the ethanol byproducts than they have in the past. Herds are also going to corn stalks as a winter feed source through Nebraska, Kansas, the Dakotas and even into Iowa this year. Scattered rains in New Mexico have helped in leading into more improved pastures being introduced this fall. Additional fields of small grains such as winter wheat, triticale and even oats will also help supply some winter grazing for the state. After going through a series of very dry years, portions of New Mexico can see some rebuilding and improvement of herds and of pasture and rangeland. However, in dry areas of the north-central New Mexico, more rain is still needed. Some of the late scattered rains seem to have just fueled the weed population this year in these areas. In an erratic year such as this, weed control will have to take top priority in both the dry and wetter than normal regions of the state. Likewise, scouting for insect and disease will also have to be a priority in order to maintain and gain on the momentum that some moisture has provided.

***An earlier picture of some rangeland in Union County where wild sunflower took advantage of limited moisture in late summer.***

## Optimize Your Bag and Bunker Operations

***Nationwide.*** When storing forage for either silage or haylage, the first consideration was the initial production and harvest operations. If production practices developed a highly digestible product that was chopped to an ideal length with moisture at harvest also ideal and maturity on the money for a quality product, then you have begun a forage storage process that could be excellent. However, the storage aspect also plays into the forage quality factor. First, in order to continue developing a quality product, the fermentation process has to be working correctly. Since microorganisms will ferment soluble carbohydrates and the byproducts from this process are volatile fatty acids, the faster the fermentation process occurs, the higher the levels of the lactic acid production as compared to the other volatile fatty acid development. This overall buildup of byproducts from the fermentation process then can create a drop in the silage (or haylage) pH to around 3.8 to 5.0. With these lower pH levels, microbial growth is quickly inhibited and anaerobic conditions develop which should then lead to stability of the product. Knowing that this process occurs and should occur as quickly as possible to preserve production quality, the need to eliminate oxygen as soon as possible will help to maintain quality and quantity of the forage. So, the silage bag or bunker should be filled as fast as possible, packed extremely tight and sealed as best as possible to eliminate oxygen so that the fermentation process can occur as quickly and efficiently as possible. And, even when feeding out the forage product, cuts into the silage or haylage should be managed to continue to minimize the exposure of the remaining product to oxygen as much as possible. So, since the process is a fairly easy, cook book procedure, quality forage should be able to be replicated again and again each year and over time. Why would the quality be different with each operation? The variables that interact to create problems in silage and haylage production include weather, distance to the site of the storage, the storage site, equipment operation problems, packing, management of the silage face as use of the product progresses and even moisture content of the product over time. Weather problems can affect the forage quality from emergence to placement in the bag or bunker. And, if the storage system is "leaky" then further weather problems can result in even excellent quality forage being reduced to a wet, poor quality mess to handle, feed and utilize as well as mix. The closer the storage to the location of the growing forage, usually the better the potential product. The more transportation and movement of the forage, the more the final quantity and quality of the silage or haylage can be affected. The storage site itself can also affect quality—if not properly sealed, packed or closed after use begins, forage will deteriorate. Equipment operation problems can also make or break the forage product. Cut management, particle size, packing the material, insuring oxygen elimination is maintained and even the manner in which the product is removed from the storage site can affect the quality of the forage as used and of the remaining stored forage. Packing alone can help or limit oxygen within the silage or haylage and effect quality. And, management of the silage or haylage face can exposed more forage to oxygen or reduce this exposure and preserve quality for longer. Current technology for optimizing silage and haylage has shown that several methods will work for the storage site. Considering all the variables that can affect the forage quality, the AgBag can be quickly filled, packed more densely and sealed tight while feeding out with less face exposure than most storage options. So, is there a cost/benefit that should also be considered? AgBags, according to research run in Wisconsin, can hold the same amount of forage as a 12 foot by 40 foot by 300 foot bunker and can feed 444 cows about 40 pounds of corn silage year round. However, with a bunker, generally you will experience an additional 10 percent shrink dropping this storage system to only 400 cows fed with the forage over the year. Also, if more oxygen is held out of the AgBag system, more lactic acid should be produced with better preservation of the product than in the bunker—again improving forage quality and maintaining more quantity. Less shrink in the product, better quality, quantity and less increase in the ADF (acid-detergent fiber) is possible with different storage operations but if high forage shrink is being experienced with your bunker operation, you may need to consider bagging and tagging your forage to reduce loss.

# Density Demands Careful Management

***Nationwide.*** When working with either silage bunkers or AgBags, packing density is important in limiting the porosity and air movement (as well as oxygen exclusion) from the forage system. Within bunkers, silage filling is usually begun by filling the back end and continuing the process by pushing the chopped forage up a sloped filling face in a progressive wedge operation. The silage can then be added into the bunker in thin (usually less than 6 inches at a time to allow better packing) layers until the bunker is filled. A plastic cover can then be added once the bunker is full to help in the ensilage process and to minimize weathering. Research out of New York revealed that packing density within the bunker can indeed influence dry matter loss.

**Table 1.** Dry matter loss as influenced by silage density in a bunker system (Ruppel, K.A., 1992. Effect of bunker silo management on hay crop nutrient preservation. M.S. thesis, Cornell Uni., Ithaca, NY).

| Density (pounds of dry matter/foot$^3$) | Dry matter loss at 180 days (%) |
|---|---|
| 10 | 20.2 |
| 14 | 16.8 |
| 15 | 15.9 |
| 16 | 15.1 |
| 18 | 13.4 |
| 22 | 10.0 |

Packing silage just makes sense—not only from the quality stand point but also because more forage can be storage in a more densely packed silage system. This reduces the annual cost of storage per ton of crop. Within the packing process, it has been found that tractor weight and packing time are the most important factors that affect silage density. Use of rear duals or all dual wheels on packing tractors has been shown to have little effect on density and other factors such as tire pressure, crop and average particle size also are not significantly correlated with density. However, the practical factor of packing time relative to crop delivery rate to the bunker does seem to affect density. Packing time per ton was highest under low delivery rates and declined with increasing delivery rates. When deliver was at 60 tons per hour, packing time was less than 1 minute per ton, making even and more compact silage less likely unless the crop was spread very thinly in layers with packing when using several packing tractors simultaneously at high rates of forage being received to the storage site. It was also found that the packing tractor should be as heavy as possible to achieve high forage density. Tractor weight could be augmented by adding tractor weights (front end and 3-point hitch) within the limits set by the manufacturer and by adding iron wheel weights or adding liquid to tires. One 40,000 pound tractor was recorded as handling a harvest rate of about 90 tons per hour while two or more 33,000 pound tractors were needed between harvest rates of 90 to 120 tons per hour. While dual wheels will not affect density when packing, they were found to improve traction and tractor maneuverability on a slippery surface. Also, having a wide enough bunker to pack in both directions (back-to-front and side-to-side) also can improve uniform packing and thus packing density.

Besides packing density, feed out method can also lessen silage losses. Feedout losses can represent up to 30 percent of the total dry matter loss in the ensiling process (Roth, G. and D. Undersander. 1995. Corn silage production, management, and feeding. North Central Region. Pub.-574). An exposed face and top as well as any loose silage lying on the floor between feedings can contribute to this loss. No more than three days worth of silage should be exposed at any time within the bunker to preserve quality. Removal rates were also found to demand no lower than 4 inches per day during the summer and at least 3 inches a day in the winter to preserve quality of the silage remaining in the bunker and was most critical with hay crop silages, high moisture corn and drier silages (Bodman, G.R. and B.J. Holmes, 1997. Managing and designing bunker and trench silos. MidWest Plan Serv., Ames, IA, AED-43). In very hot weather, the way to determine if more silage should be removed per day from the bunker face is to take a 12-inch deep boring into the removal face at the beginning of a feeding and if adequate silage is removed in a well-packed bunker, then the sample should be cool to the touch throughout the core. If a portion of the core is warm, more of the silage face should be removed each day. Besides feed out, losses should also be minimized during silage removal. In general, dry matter loss is 3 percent, even at the recommended removal rate of 6 inches per day for a 35 percent dry matter silage with a density of 14 pounds of dry matter per foot cubed, proportional to silage porosity. Porosity had to be less than 55 percent for the removal of dry matter loss less than this expected 3 percent, and this did occur with a tested face removal of at least 9 inches per day. And, as the forage dry matter content increased, higher and higher dry matter densities were needed to keep the removal losses under this 3 percent. As silage face removal rates decreased from 9 inches down to 3 inches per day, the forage needed to have a lower dry matter content (have more moisture) and/or have a higher dry matter density to keep losses under 3 percent.


***Checking silage bagging or bunker operations is important to maintain packing density as well as porosity to preserve silage quality.***

There is much less research on AgBags but generally losses reported in the research done is usually less than in bunkers. One reason it is more difficult to quantify losses in bags is that densities in AgBags are difficult to obtain. Wet densities appear about 43.6 pounds per cubic foot, but other reports also show that corn silage densities can be less than other crops such as alfalfa, and even an alfalfa:grass silage. One reason, even with different densities that AgBags can still not have the losses bunkers show is that these bag systems can be emptied rapidly and can be resealed between feeding events. Also, densities within the bags can vary based on location. As you would guess, silage at the top and toward the face of the system, is generally less dense than that in the center and bottom portion of the bag. The main source of any substantial losses in AgBags is from spoilage from seepage—such as bird damage to the bag or tears from the bagging or removal operations.

In summary, effective operations that seal and provide a density to the silage system that can be feed and quality maintained will help in preserving both the quality and quantity of the silage stored, whether using bunkers or AgBags.

# Limit Mold Growth in Hay

***Statewide.*** In order to maintain quality of hay, mold growth within the product should be limited. The actual start of potential hay mold starts earlier than in the hay stack—it actually begins within the standing crop. Even in the field, the plant leaf and stem surfaces have bacteria and yeasts that help protect the plant from fungal infections. Any fungi that can grow and multiply on cut and baled hay is the culprit for mold that can develop after storage. The early plant protection by natural bacteria and yeasts lessen after hay is cut and the plant material begins to dry out. With this drying process, a new set of microbes develop that feed off the sugars and organic acids exuded from the drying plant material. Research out of Canada has shown over ten different groups or genera of fungi can be isolated from within a hay windrow. And, the faster the hay crop dries down, the less the dry matter losses usually found from these harbored fungi. Thus, our usually conditions in New Mexico are often better than in wetter regions for maintaining hay quality and lessening dustiness of the hay, which can be caused largely from excessive fungi growth even within the windrows. However, even with all the fungi that attacks hay in the windrows, yet a new group of microbes can appear once hay is baled in the form of additional fungi and yeasts. These new culprits can begin to multiply, especially when hay moisture content is between 20 to 30 percent. These new fungi actually will outcompete the windrow fungi as they can grow at lower moisture and higher temperatures. Three of these detrimental fungi are Aspergillis, Fusarium and Penicillium. Some, especially Aspergillis flavus, are known to produce mycotoxins. While usually very low, this mycotoxin production can be higher under higher moisture conditions. While the hay bale continues to dry out in storage, the temperature within the bale is also almost always rising for a short period following baling due to natural plant reactions and the increasing bacteria populations. In adequately dried hay, this temperature increase never gets to be enough to cause heat damage to the hay; however, in high moisture hay, temperatures may reach over 150 $F^o$, causing excessive heat damage and even the risk of fire. Very little fungi grow at moisture levels below 15 percent. Thus, if rain or heavy dew accumulates on windrows, if possible, wait to bale until moisture levels subside in order to limit fungi growth and preservation on the hay bales. Mold growth in hay is often described by the discoloration, musty odor or even white mold present visually. Although these visual descriptions can show mold presents, it is very difficult to test and measure mold in a rating scale due to traditional testing. Generally, testing will reveal spore counts but may ignore mold mycelium present that can contribute to the amount of white mold seen on hay. Some chemical tests that measure total mycelium and spores are available but are not commonly used and may show levels that may not be detrimental to livestock. Some hay put up in the best of conditions may still show one to two percent fungal biomass from such an intensive chemical test. On the other hand, severely molded hay may be as much as up to 10 percent total fungal biomass. General relative feed value (RFV) tests alone will not reveal the mold content of hay. Two hay samples can have almost the same RFV but one can be moldy and the other can be relatively free from contamination. Thus, the most often proposed problem of moldy hay is the loss of palatability of the hay over time. Probably taste, dustiness and loss of feed quality all interact in moldy hay to affect palatability of the hay product. In a feed study with four-month old Holstein heifers, three different hays were fed that contained fungi biomass levels of 1.7, 3.2 and 4.3 percent. The heifers were allowed free grazing on as much as they wanted. The intake was as much as 40 percent less in the two high levels of moldy hay as compared to the low mold hay supplied. In a similar study, weaned Angus calves were fed alfalfa hay with fungal biomass established at 3.7, 4.3 and 5.4 percent. Unlike the Holstein study, the intake was the same at all three biomass levels. There was no difference in animal stress level or problems to the calves from the feeding study, revealing how difficult it is to determine if some levels of mold on hay will actually lower feed quality. The presence of mold does indicate, however, that there are problems in the hay handling—whether it was put up moisture or it had problems with heat damage. So how can you prevent mold development? Fungi is never completely eliminated from within the windrow or in the bale, however mold can be lessened by trying to put up dry hay. In rainy conditions, hay desiccants such as potassium or sodium carbonate can allow faster dry down times but these also work by partially dissolving the waxy cuticle on the alfalfa stem. It dries out faster but the effectiveness of these desiccants vary greatly depending on climatic conditions. A hay preservative can also be used. These limit the microbial growth that leads to hay heating as well as inhibits mold development. The most effective preservatives are organic acids like propionate and acetate and such derivatives as sodium diacetate. However, preservatives have to be added at the recommended rates and storage damage to hay still increases when higher moisture hay is stored. Bacterial inoculants also provide another method to reduce mold growth. These inhibit the growth of fungi in the windrow and after baling when the hay is dosed with enough

***Waiting to bale until hay is dry, when possible, can really improve hay condition and preservation.***

## Pasture Management Doesn't Stop During the Winter

***Statewide.*** To promote improved pastures and develop soil tilth, management of your fields doesn't stop in the winter. Especially over the winter, damage to pastures can make or limit the life span of a forage stand. With most grasses, the bottom two to three inches of plant material above ground is where most of the sugars and proteins are stored for regrowth. Thus, keeping this portion of the pasture grass in place during the winter can help plants retain an "energy bank" for the plant. If winter grazing in a pasture begins when pasture grass is about eight inches tall, consider grazing down only to three or four inches before rotating out of the pasture in order to protect the plant toward regrowth and to maintain grass health. Overgrazing and more severe winterkill can occur when livestock graze grass below the energy bank zone. This overgrazing in turn can lead to bare spots that again compound pasture problems by allowing these areas to then turn into weed growth, cause soil erosion and even establish an early decrease in pasture productivity. Rotational grazing, particularly for horses who evolved to continuously graze, can help in preventing winter over grazing and pasture productivity losses. Rotational grazing also insures that select overgrazing of certain grass species within the pasture also does not result. Intensive grazing on wet pastures during the winter can also lead to soil compaction, rutting and an overall reduction in pasture health. If winter pastures are not consistently grazed or sporadic heights in grass stands begin to develop, it might be beneficial to mow and drag pastures. Mowing prevents plants from becoming so large and old that they may become less palatable and dragging an intensely grazed pasture with chains, a rolling spike or other less intrusive equipment or drags can break up manure clumps and help to maintain more even grass growth across the pasture. Also, soil testing pastures can also be done to determine additional fertility needs for the field.

**Mark your calendar for December 11-13, 2006 for the 2006 Western Alfalfa & Forage Conference in Reno, Nevada at John Ascuags's Nugget (Sparks).**

# Western Alfalfa & Forage Conference

## *December 11-13-2006, John Ascuaga's Nugget, Reno, NV*

Sponsored by the Cooperative Extension Services of: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming

***Monday, December 11—Field Tour: (9:00 a.m. – 5:00 p.m.)*** Visit the Top Gun facility (SS# required for security), Nevada agriculture, water systems and tourist sites. Jay Davidson (NV), Chair.

***Tuesday, December 12 -- General Session - DAY 1 (8:00 a.m. - Noon)***

***Emerging Issues and Market Trends***

6:30- 10:00 a.m. Registration
8:00 Introduction—Karen Hinton, Dean & Director, Univ. of Nevada, Reno, NV
8:10 Emerging Forage Issues in the NW States—Glenn Shewmaker, Univ. of Idaho, Twin Falls, ID
8:35 Emerging Forage Issues in SW States—Dan Putnam, Univ. of California, Davis, CA
9:00 Trends in the Dairy Market—Bob Naerebout, Idaho Dairymen's Association, Twin Falls, ID
9:25 Trends in the Horse Market—Laurie Lawrence, University of Kentucky, Lexington, KY
**10:00 BREAK**

**Water, Economics, and Profitability**

10:30 Hay Prices and Trends —Seth Hoyt, National Ag. Statistics Service, Sacramento, CA , and Tim Woodward, Forage Specialist, Columbia Basin College, Pasco, WA
10:55 Water Situation and the Future—Scott Matyac, CA Dept. Water Resources, Sacramento, CA
11:20 Keeping your Head above Water in the Hay Industry—Dick Schader, Red Rock Ranch, MacDoel, CA and Richard Larsen, Larsen Farms, Dubois, ID

**Noon: BANQUET LUNCH --** Roy Smith, Cowboy Poet and Rancher, Montague, CA

***BREAKOUT SESSIONS***

***I. Pest Management (Does not repeat)***

1:25 Toxic Weeds and Their Impacts—Birgit Puschner, University of California, Davis, CA
1:50 RR Alfalfa for Stand Establishment—Mick Canevari, University of California CE, Stockton, CA
2:15 Avoiding Weed Resistance in RR Alfalfa—Steve Orloff, University of California CE, Yreka, CA
2:40 Controlling Weeds in Grass Hay—Rob Wilson, University of California, Susanville, CA
**3:05 BREAK**
3:30 Rodent Control Update—Gary Witmer, Wildlife Biologist, USDA-APHIS, Fort Collins, CO
3:55 Alfalfa: Weevils, Aphids and Worms—Mike Rethwisch, University of California CE, Blythe, CA
4:20 Managing the Major Alfalfa Diseases—Don Miller, Target Seed, Nampa, ID
4:45 Year-Round IPM in Alfalfa—Pete Goodell, University of California, Parlier, C
**5:15 Adjourn**

***II. Utilizing a Wide Range of Forage Crops (Repeats)***

1:25 Summer Annual Forages —Tom Griggs, Forage Specialist, Utah State University, Logan, UT
1:50 Cool Season Perennial Grasses—Kevin Jensen, Forage Geneticist, USDA-ARS, Logan, UT
2:15 Warm Season Crops for Biomass—Steve Fransen, Washington State Univ., Prosser, WA
2:40 Small Grain Forages—George Fohner, Plant Breeder, Resource Seeds, Gilroy, CA
**3:05 BREAK**
**3:30-5:15 (REPEAT 4 TALKS)**

***III. Irrigation and Soils (Repeats)***

1:25 Potassium Management in Alfalfa—Rich Koenig, Washington State University, Pullman, WA
1:50 Specialty Fertilizers and Micronutrients—Denise McWilliams, NM State Univ., Las Cruces, NM
2:15 Allocation Strategies in Water Short Years—Howard Neibling, Univ. of Idaho, Twin Falls, ID
2:40 Management of Center Pivot Irrigation—Guy Fipps, Texas A & M Univ., College Station, TX
**3:05 BREAK**
**3:30-5:15 (REPEAT 4 TALKS)**
**5:00 - 7:00 p.m. Exhibitors Reception**
**5:30 p.m. Auction for Hay Growers' Groups**

***Wednesday, December 13 – General Session - DAY 2 (8:00 a.m. - Noon)***

***6:15 a.m. CAFA Breakfast – (no charge—need ticket)***

**Future Trends with Alfalfa & Forages**

8:00 Biotech Traits in Alfalfa—Mark McCaslin, Forage Genetics Int'l., Minneapolis, MN
8:25 Energy Crops and Their Implications for Forages—Joe Bouton, Samuel Roberts Noble Foundation, Ardmore, OK
8:50 Future Trends in Alfalfa Establishment—John Kugler, Washington State Univ., Ephrata, WA
9:15 Future Trends in Forage Quality Analysis—Dan Putnam, University of California, Davis, CA and Dan Undersander, Univ. of Wisconsin, Madison, WI
**9:45 BREAK**

**Harvesting Technology and Quality**

10:20 Rate of Quality Change in Alfalfa—Neal Martin, USDA-ARS Dairy Forage Center, Madison, WI
10:45 Cutting Schedule Strategies—Steve Orloff, Univ. of California. Yreka, CA and Dan Putnam, University of California, Davis, CA
11:10 Harvesting Impacts on Forage Quality—Dan Undersander, Univ. of Wisconsin, Madison, WI
11:35 Protecting Hay Quality During Storage—Juan Guerrero, Univ. of California, El Centro, CA
**Noon LUNCH (on your own)**

**Risk Management in Forage Production**

1:30 Overview of Risk Management:—Willie Riggs, Univ. of Nevada, Eureka, NV
2:00 Purchasing Equipment vs. Custom Rates—Herb Hinman, Washington State Univ., Pullman, WA
2:30 One Cut Forage Systems for Drought and Energy Considerations—Steve Fransen, Washington State University, Prosser, WA and Tip Hudson, Washington State University, Prosser, WA
3:00 Estate Planning—Kynda Curtis, University of Nevada Cooperative Extension, Reno, NV
**3:30 Discussion**
**4:00 Adjourn**

## 2006 Western Alfalfa and Forage Conference – Registration Form

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## Cotton Harvest Tricky this Year

Statewide. Defoliation will be one of the most critical decisions this year for cotton producers. There is no one complete prescription that will fit every field. Regrowth of cotton this year is a concern especially if harvest is spread out. The decision to use a boll opener may also be in your plans for some fields this year. Some boll openers do enhance the activity of defoliants but this is not always the case. Also, in some of the mixes the active ingredient is below the needs for boll opening such as in Prep and ethephon mixes. Check the label if a boll opening effect is desired. With cool nights, a hard freeze could also insure a jump start into harvest. During this late season timing in cotton where highs are below 80°F and lows are below 60°F, cotton will harvest easier if it is preconditioned and then defoliated or defoliated with combinations using ethephon or hit with a hard freeze and defoliates used as needed quickly, particularly in Upland cotton. To precondition, the use of DEF/Folex at 0.5 to 1 pint 7 to 9 days before defoliation can be used followed by a defoliate of DEF/Folex at 2 pints or Harvade at 8 ounces with 1 pint of crop oil. A second preconditioning strategy is to use ethephon at 0.67 to 1.33 pints 7 to 9 days before defoliation and follow with defoliation such as DEF/Folex at 2 pints or with Harvade at 8 ounces plus 1 pint of crop oil. Preconditioning can also occur with Roundup at 2 pints 7 to 9 days before defoliating with DEF/Folex at 2 pints or Harvade at 8 ounces with 1 pint of crop oil. Strict defoliation can be run with DEF/Folex (2 pints) plus Starfire (4 to 6 ounces); sodium chlorate at 4 pounds; Harvade at 8 ounces plus 1 pint of crop oil; Ginstar at 8 to 10 ounces; or, Finish at 1 to 1.5 pints plus DEF/Folex at 6 to 12 ounces (read label for limitations). If defoliation as well as boll opening is desired, consider these options: DEF/Folex (1.5 to 2 pints) plus ethephon (2 to 2.67 pints); Harvade (8 ounces) plus 1 pint of crop oil plus ethephon (2 to 2.67 pints); Cotton Quik (2 quarts) plus DEF/Folex (1.5 pints) or Harvade (8 ounces) plus 1 pint crop oil; Cotton Quik (2 quarts) plus Ginstar (6 to 10 ounces); Finish (1.5 quarts), under ideal conditions only; Finish (1-1.5 quarts) plus DEF/Folex (1 to 1.5 pints); Finish (1-1.5 quarts) plus Ginstar (6 to 10 ounces); or, Ginstar (8 to 10 ounces) plus ethephon (2 to 2.67 pints). If preconditioning, defoliation and boll opening is needed consider using DEF/Folex (1.5 to 2 pints) 7 to 9 days before defoliation followed by defoliation and boll opening using ethephon (2 to 2.67 pints). Adding spray adjuvant when temperatures are low may enhance activity of the suggested treatments if the use does not lead to too much leaf sticking. Also, the addition of ammonium sulfate (2 pound/A) can improve the activity of Harvade. Also, the addition of Starfire (4 to 6 ounces) may aid defoliation and weed desiccation in fields with problems. The use of Roundup or generic glyphosate products does not provide regrowth suppression on Roundup-Ready cotton. Some of the product that are best for removing juvenile foliage growth after rains are: Ginstar and Harvade. Those chemicals that are best for opening bolls include ethephon and especially Cotton Quik and Finish. Those for removing mature foliage are DEF/Folex, Dropp, Ginstar, Harvade and Finish. Those that are good for desiccating weeds to reduce harvest interference, prevent green stain and limit moisture are Harvade, sodium chlorate, Roundup and Starfire.

***This is going to be a year when different cotton fields will require different harvest aid treatments.***

## Current Crop Conditions

***Statewide.*** The season is running down into winter with grain sorghum, cotton and pecans still out in fields. The scattered rains over much of the state has spread out harvest timing dramatically in areas. It would be worth it to have a hard freeze and in about a week to just get on into finishing harvest on these crops. In particular, cotton harvest on will have to take on a closer look at harvest aid chemicals in order to optimize the harvest timing and cotton quality. Our extended fall down in southern New Mexico has been punctuated with spats of rain just when one is about ready to make a defoliation treatment. The hail too has been hit and miss. Some of the grain sorghum for dryland looks excellent in the northeast and pastures and rangeland have seen improvement across the state in most areas. Weed control on cool-season weeds is called for and some planning on spring weed control will have to be done for the diversity of weeds that seeded out this year. Much of the late cabbage, spinach and lettuce that benefited in being able to provide a market where the export of California produce was halted for a few weeks benefited some producers in the last few weeks. Sandier fields that got in onions may benefit in June if supplies are lower than normal due to untimely rains at planting. Peanuts are in, corn silage is in, corn grain harvest is largely over and hay is settling into the winter cycle. Cool-season improved pastures planted around bursts of rain have benefited where flooding did not limit stands. Settle in for hay supplies for the winter. The cold fronts are beginning to show up.

The New Mexico Hay Association is one point at which to determine available hay or hay requests. The website is at **http://www.nmhay.com** and can be accessed easily online. You may also ask for additional information from the site by emailing your questions to the Association at info@nmhay.com .

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