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# Forage News [2008-12]

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# FORAGE NEWS

For more forage information, visit our UK Forage Extension Website at: **http://www.uky.edu/Ag/Forage**

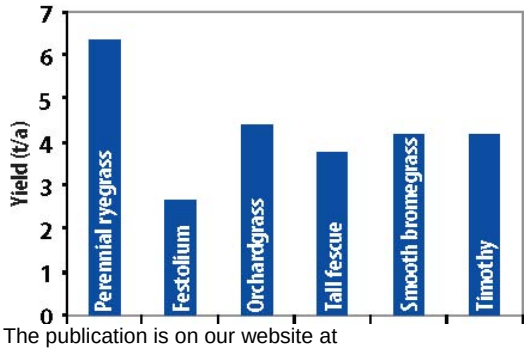
## December 2008

*Garry D. Lacefield and S. Ray Smith, Extension Forage Specialists • Christi Forsythe, Secretary*


### Improved Grass Varieties Benefit Farmers

The following figure was taken from a new national publication on "Improved Grass Varieties". The publication was developed by a group of forage scientists and written by Dr. Dan Undersander, Extension Forage Specialist at the University of Wisconsin.

**Annual difference between highest and lowest yielding variety** University of Wisconsin trials




The publication is on our website at http://www.uky.edu/Ag/Forage/ForagePublications.htm

### Alfalfa and the Environment

**Reduced soil erosion and runoff**—Alfalfa is recognized as an excellent ground cover. Alfalfa reduces soil erosion and also reduces runoff of phosphorus and pesticides into streams and lakes. Alfalfa is one of the best crops for trapping nitrogen before it gets into groundwater due to its deep root system which extends below the shallow root-absorption zone of most other crops.

**Added manure management options**—Alfalfa provides opportunities for manure application several times a year. This helps producers spread their workload and minimize storage facilities.

**Improved soil health**—Since alfalfa is a perennial crop that lasts several years, only a portion of a grower's entire acreage needs to be seeded each spring. In many areas alfalfa can be seeded in the summer after canning crops or short season small grain crops, reducing the need to seed alfalfa into wet fields in early spring. Absence of tillage during the life of the stand reduces the breakdown of soil structure compared to annually tilled row crops.

**Wildlife benefits**—Alfalfa is an incredible home for many insects that are beneficial, and that prey on other insects, produce honey, and serve as a food source for birds. Alfalfa attracts many birds and small mammals to feed and next because it provides ground cover for a long season. *(SOURCE: National Alfalfa & Forage Alliance, www.alfalfa.org)*

### Grass May Help Balance Hot Dairy Diets

Adding a small amount of grass to high-quality corn silage and alfalfa dairy rations could tone down energy levels while boosting fiber, says Dave Combs, University of Wisconsin dairy scientist. That may reduce the amount of laminitis in dairy cows currently being fed hot diets.

"We're burning these cows up," Combs told the crowd at last month's World Dairy Expo. "Survey results show 20-25% of all cows in the Upper Midwest are mildly lame. That's a scary number. About 42% of the lameness cases that veterinarians have identified are basically due to nutrition. The laminitis issues we're seeing on farms are directly related to feeding diets that are too hot."

With today's high-quality corn silage and alfalfa, it's often not feasible to cool hot rations by removing corn silage and incorporating more alfalfa, he says. "In many situations, there is a need for highly digestible fiber, and grasses would seem to be a more effective source of fiber than a high-quality (>160 RFQ) alfalfa."

He suggests seeding grasses like reed canarygrass, perennial ryegrass, tall fescue, annual ryegrass or orchardgrass with alfalfa. "If they're well-managed, grasses are an excellent source of protein for dairy cattle – around 20%, just like our alfalfas. They're actually a little higher in fiber and that's not necessarily a bad thing. A lot of the rations I see in the Midwest are incorporating straw into the diets to pull enough fiber into them. Why not pull a source of fiber that's got some digestibility and some energy in with it?

"The proportion of fiber that's digestible is actually higher in grasses than it is in alfalfa and corn silage," Combs continues. "So every mouthful of fiber that cows get from grass has some energy value."

Mixing grasses with alfalfa in a growing system has other benefits, he says. "You get some faster drying … and grasses incorporated with alfalfas do reduce risks of winterkill." Grasses also bulk up establishment-year yields of alfalfa and aid in manure management. "Grasses suck up manure nitrogen," Combs says.

"I'm not talking about taking alfalfa completely out of the ration," he cautions. "I'm talking about putting a small amount of grasses in combination with corn silage and alfalfa in the diet. To make these diets work, though; they have to be high-quality grasses."

One problem, he says, is that there's been little research in how to strategically use grasses in modern dairy diets. "There is a need to evaluate the potential of grasses with legumes on high-corn-silage diets that are low in fiber and high in NFC," Combs concludes. *(SOURCE: eHay Weekly, November 11, 2008)*

### Ethanol Maker Files For Bankruptcy Relief

VeraSun Energy Corp., one of the nation's largest ethanol producers, has filed a voluntary petition for relief under Chapter 11 of the U.S. Bankruptcy Code to enhance liquidity while it reorganizes.

According to company press releases, the filing was brought on by a series of events that led to a contraction in VeraSun's liquidity, impairing its ability to operate its business and invest in production facilities. The company says it suffered significant losses in the third quarter of 2008 due, in part, to a dramatic spike in its corn costs. Worsening capital market conditions and a tightening of trade credit also placed severe constraints on the company's liquidity position.

In the wake of the filing, VeraSun also announced last week that it will indefinitely delay the startup of a 110-million-gallon/year ethanol bio-refinery now under construction in Janesville, MN. That facility was to begin operations before the start of the new year. The company will continue operations at 14 facilities, located in eight states, during the Chapter 11 proceedings.

Headquartered in Sioux Falls, SD, VeraSun was founded in 2001. The company currently has an annual production capacity of 1.42 billion gallons of ethanol and more than 4.5 million tons of distillers grains. *(SOURCE: eHay Weekly, November 11, 2008)*

## Pricing Hay: Consider Plant Nutrient Value

There are so many variables involved in establishing a fair price for hay that it can sometimes seem overwhelming. One way of establishing a fair "basement level" price for hay is to consider only the value of the nutrients removed in the crop. For example, a ton (dry matter basis) of typical forage removes about 12 to 15 pounds of phosphate ($P_2O_5$) and about 50 to 60 pounds of potash ($K_2O$). If the crop is mostly legumes (alfalfa, clover, or trefoil) that have been properly inoculated at planting and the soil pH is appropriate for the species, you don't need to worry about nitrogen, but legumes will generally require periodic liming to stay productive, and (except for trefoil) generally require reestablishment every few years. Many grassy stands can stay productive for many years with minimal lime additions, but each ton of dry matter harvested will also require 30 to 50 pounds of nitrogen per acre.

The value of the nutrients in the crop can be established without argument. They are definitely being removed from the land, and they are definitely being imported onto the farm that receives the hay—someone is losing them, and someone is gaining them. If we consider the value of these nutrients at the upper end of today's prices, here's an example of what the cost of replacing them would be for a grassy stand:

## Performance and Physiology of Steers Grazing Toxic Tall Fescue as Influenced by Feeding Soybean Hulls and Steroidal Implants

Fescue and toxicosis has a negative impact on animal performance and physiology, but concentrate feeding and ear implantation with steroid hormones could mitigate problems in yearling cattle on toxic tall fescue pasture. Sixty steers were grazed on endophyte-infected (E+) 'KY-31' tall fescue for 77 d in 2007 (19 Apr. to July 5) and 84 in 2008 (29 Apr. to July 24) to evaluate effects of ear implantation with steroid hormones and feeding pelleted soybean hulls (SBH) on performance and physiology of yearling steers. Steers were stratified by body weight for assignment to six, 3.0-ha toxic tall fescue pastures. Treatments of with or without SBH were randomly assigned to pastures as the main-plot treatments. Steers on SBH treatment were group-fed to provide daily consumptions of 2.3 kb (as fed) steer$^{-1}$. Sub-lot treatments of with or without ear implantation with steroid hormones (200 mg progesterone – 20 mg estradiol) were assigned to groups of five or six steers within each pasture. Unshrunk body weights were measured at the start (following a 7-d pasture adjustment period) and finish of the grazing experiment to calculate average daily gain, and rectal temperatures and hair coat ratings were recorded at the conclusion of grazing. Jugular blood was collected on days 56 and 77 in 2007 for assaying serum prolactin. Compared to the control treatment (no feeding or implant), feeding SBH provided a 45% increase ($P<0.001$) in average daily gain and implantation improved ($P<0.001$) average daily gain by 21%; however, combining SBH and implantation provided greater ($P<0.001$) average daily gain (1.23 kg/d) than SBH without implantation (0.95 kg/d) and implantation without SBH (0.81 kb/d). Rectal temperatures were greater ($P<0.05$) in cattle being fed SBH (39.2 vs 38.9°C). There was a SBH by implantation interaction ($P<0.01$) on rectal temperature. Rectal temperature was greater ($P<0.05$) with implantation without SBH (39.5°C) than with SBH and implantation (39.3°C). Implantation did not affect ($P>0.10$) serum prolactin or hair coat ratings. Feeding SBH provided greater ($P<0.05$) serum prolactin (with = 104 ng/mL, without = 29 ng/mL) and a greater percentage of steers with sleek hair coats (with = 17.7%; without = 4.8%). Results of the experiment indicated that feeding SBH and implanting with steroid hormones can be combined to substantially increase steer weight gain and that both treatments and reduce the incidence and severity of toxicosis. *(SOURCE: Jessica M. Carter, Glen E. Aiken and Charles T. Dougherty IN SERA-IEG8 – 2008 Annual Report)*

**Value of minerals in hay/haylage**

| Nutrient | Fertilizer cost/t | Nutrient content (%) | Nutrient cost/lb | Hay/straw content (% DM basis) Average | Hay/straw content (% DM basis) Low | Hay/straw value Average | Hay/straw value Low |
|---|---|---|---|---|---|---|---|
| nitrogen | $ 1,200 | 82 | $ 0.73 | 3.0 | 1.5 | $ 41.90 | $ 21.95 |
| potash | $ 850 | 60 | $ 0.71 | 2.6 | 1.0 | $ 36.83 | $ 14.17 |
| phosphorus | $ 1,200 | 46 | $ 1.30 | 0.35 | 0.20 | $ 9.13 | $ 5.22 |
| Secondary and micronutrients | | | | --- | --- | $ 6.00 | $ 4.00 |
| total | | | | | | $ 93.86 | $ 45.34 |

The complete spreadsheet is on our website at www.uky.edu/Ag/Forage/ under the Forage Decision Aids link. *(SOURCE: Mark J. Kopecky, Carrie Laboski, and Dan Undersander, University of Wisconsin.)*


## Upcoming Events

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| JAN 6 | Kentucky Small Ruminant Grazing Conference, Fayette County Extension Office |
| JAN 8-10 | Kentucky Cattlemen Association Annual Meeting, Lexington |
| JAN 9 | Forages at KCA, Lexington |
| JAN 21-22 | Heart of America Grazing Conference, Columbus, IN |
| FEB 19 | 29th Kentucky Alfalfa Conference, Cave City Convention Center |
| JUL 23 | UK All Commodity Field Day, Research & Education Center, Princeton |

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