Dairy E-News

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Dairy Ambassador

Julie Griffin, a Benton County 4-H'er, was named the 2016 Arkansas Dairy Ambassador during the 4-State Dairy Days in Bentonville on June 4. Participants of the Arkansas Dairy Ambassador contest were required to participate in at least two promotional activities, interview with a panel of judges, present an oral presentation and complete an essay. For the next year, Julie will be required to attend dairy promotional activities throughout the state, present awards and help shape the dairy ambassador program as part of her Arkansas Dairy Ambassador responsibilities.

Susan Anglin, Arkansas Farm Bureau Dairy Commodity Chair, presents to Julie Griffin her plaque after being named the 2016 Arkansas Dairy Ambassador.

Dairy Quiz Bowl Winners

Lonoke County took home top honors in both the State 4-H Dairy Judging and Quiz Bowl competitions during the 4-State Dairy Days in Bentonville on June 4. Hunter Sellers, Gavin Walker, Joey Summerford, and Emily Davis comprised the winning judging team. They judged five classes and gave two sets of reasons. They have the opportunity to represent Arkansas at the National 4-H Dairy Judging contest in Madison, Wisconsin in October. The Quiz Bowl team members included Hunter Sellers, Austin Stagner, Mallory Perkins, and Mark Butler. They took an exam to test their dairy knowledge and then competed in several rounds of quiz bowl competition before claiming the title. Mallory Perkins won high point individual.

Winning 2016 Arkansas Dairy Quiz Bowl Team (L-R): Dr. Chelsey Ahrens, Austin Stagner, Mallory Perkins, Mark Butler and Hunter Sellers.

Using Spring Oat Planted in Fall to Produce a Quick, High-Quality Fall Forage Crop

John Jennings, Kenny Simon, Dirk Philipp and Robert Rhein

Providing adequate, high-quality forage for grazing in late October through December is difficult to accomplish with traditional winter annuals such as wheat, rye or ryegrass. Spring oats can provide an emergency, high-quality forage in fall when other forages are less productive, therefore reducing dependence on stored or purchased feed. Spring oat is often planted in northern states for a quick fall forage crop. Spring oat has a high risk for winterkill, but the yield potential for fall forage is greater than for wheat and other winter annuals. Arkansas demonstration results show that spring (Jerry) oat planted in early September produced forage for grazing by late October.

A replicated research trial was conducted at the University of Arkansas Watershed Research and Education Center (WREC) in Fayetteville to determine the influence of planting date on late fall dry matter yield of a spring oat (Jerry), a winter oat (Bob) and a winter wheat (VNS) planted in a tilled seedbed.

The small grains were no-till planted on a well-firmed, tilled seedbed on August 31, September 22 and October 13. Each small grain was planted at 115 lb/acre. NPK fertilizer was applied to each plot immediately after planting based on soil test recommendation for winter annual forage production.

Stand observations were made during the fall growing season. Plots planted on August 31 and September 22 were slower to establish than those planted on October 13. This is likely due to above average temperatures coupled with below average rainfall during the month of September. Plots planted on October 13 established quickly but had limited fall forage production.

All plots were harvested on December 2. Plots planted on August 31 and September 22 produced more dry matter (DM) than those planted on October 13 (Figure 1.) Jerry oat produced significantly more DM yield than Bob oat and VNS wheat for each planting. Bob oat produced significantly more DM yield than VNS wheat for the August 31 planting, but not the September 21 or the October 13 planting. VNS wheat produced limited DM yield regardless of planting date. To sustain grazing animals, at least 900 to 1,200 pounds of forage dry matter per acre should be available before turn-in. Therefore, only Jerry oat and Bob oat planted on August 31 produced enough forage DM for fall grazing.

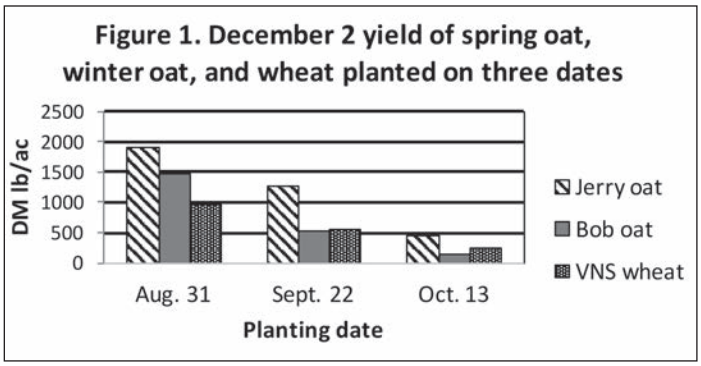

Figure 1. December 2 yield of spring oat, winter oat, and wheat planted on three dates

Forage quality samples were collected at harvest. Forage nutritive quality for the small grains was excellent (Table 1). However, forage quality tended to decline with plant maturity. Percent CP and TDN were lower for the August planting date than for the September 22 and October 13 dates. August-planted Jerry oat was in the late boot to early heading stage at harvest, and Bob oat ranged from vegetative to boot stage. However the forage quality exceeded nutrient requirements for all classifications of livestock. Plots planted on October 13 had the highest percentage of CP and TDN because plants were in the vegetative stage.

Table 1. Influence of planting date on late fall quality of spring oat, winter oat and wheat

	Jerry oat		Bob oat		VNS wheat	
Planting Date	CP (%)	TDN (%)	CP (%)	TDN (%)	CP (%)	TDN (%)
August 31	17.1	66.8	19.6	72.7	21.6	72.9
September 22	23.3	74.3	29.8	70.5	27.0	80.3
October 13	28.9	74.7	30.9	83.2	30.4	77.7

Winter injury was also measured at harvest. Jerry oat had significant winter injury regardless of planting date. Winter injury on Bob oat and VNS wheat was minor. However, Bob oat and VNS wheat planted on August 31 had more winter injury than for the September 22 and October 13 planting dates. VNS wheat planted on October showed no signs of winter injury.

Early planted Jerry oat offers high-quality forage for grazing from late October through December. However, a producer must plant early to maximize yield potential. Delaying planting from August 31 to September 22 reduced fall yield potential by 50% and delaying planting from September 22 to October 13 reduced yield potential by another 50%. One potential disadvantage of oat is the lack of cold hardiness. Producers should plan to utilize oat forage by January 1 due to the high potential for winterkill and cold injury. Wheat has limited DM yield in fall but has less winterkill and more yield potential in spring.

Response of Dairy Heifers to Increasing Amounts of Dried Distillers Grains in a Limit-Fed Diet

Dr. Shane Gadberry

A study was recently published by Dr. Jill Anderson of South Dakota State University on the use of dried distillers grains in growing heifer rations. Distillers grains constituted 30%, 40% or 50% of the ration dry matter composition, replacing moderate quality grass hay (9.8% CP, 38% ADF, 66% NDF on a dry matter basis). All three diets were limit-fed based on the 2001 Nutrient Requirements for Dairy Cattle equations for a targeted weight gain of 1.75 lb/d for a 550 pound Holstein heifer. As a result, replacing moderately digestible hay with greater digestible distillers grains resulted in a lower target feeding rate as the amount of distillers grains in the diet increased. The resulting target feeding rate was 2.65%, 2.5% and 2.35% body weight for 30%, 40% and 50% distillers grains, respectively. Feeding rate in this study was adjusted every two weeks, and the study was conducted for 16 weeks.

Measured dry matter intake of the diets was 2.45%, 2.33% and 2.19% body weight for the 30%, 40% and 50% distillers grains diets, respectively. The weight gain of the heifers was statistically similar among treatments and averaged 1.96, 2.07 and 2.13 lb/d for the lowest to the highest rate of distillers grains. In addition, body condition score remained similar among treatments. As the proportion of distillers grains increased in the diet, the feed conversion (lb feed per lb gain) of the diet was improved. Feed conversion was 7.1 for the 30% distillers diet, 6.4 for the 40% distillers diet and 5.8 for the 50% distillers diet.

A few points to consider:

- The Nutrient Requirements for Dairy Cattle was an effective tool for predictive planning of these heifer rations.
- Even at the highest rate, fat content of the distillers grains did not appear to disrupt performance as fiber digestion was not impacted by level of distillers grains in the diet. In addition, sulfur did not appear to cause a problem at the highest level of distillers grains in a limit-fed diet. The distillers used in this study averaged 0.73%.
- Greater diet digestibility and reduced feeding rate with targeted feeding for average daily gain reduced manure output based on dry matter digestibility.
- Limit feeding a higher concentrate diet reduced the amount of hay necessary to develop heifers. When developing heifer rations, consider factors such as the cost per pound of nutrients from available feedstuffs, equipment requirements, feeding environment and labor.

Fall Armyworms Are Widespread This Year

Kelly M. Loftin

Fall armyworm is abundant this year and is occurring in most regions of the state. In many cases, their population is well above the treatment threshold of three worms per square foot and of mixed sizes. Infestations are often overlooked when caterpillars are small and eating very little. Once caterpillars grow large and consume more grass, damage becomes significant. Fall armyworm infestations may continue through September.

Clues to fall armyworm infestations include: 1) field appears “frosted”, 2) presence of birds in the field or 3) the field smells like freshly cut hay. Armyworm outbreaks often occur in waves about 30 days apart. However, when mixed worm sizes are found, overlapping generations are present and new infestations occur more frequently than 30 days.

Scouting for fall armyworm presence is critical to avoid forage losses. Grass blades, stems and organic debris at plant base and soil should be examined carefully. It is best to take at least 10 one-foot-square random samples across the pasture or hay meadow. Make note of the armyworm size and number as this will help make good management decisions.

There are a few tips to remember about fall armyworm control. Do not treat when armyworms are tiny, however, get prepared. Natural enemies such as parasites, predators and pathogens occur and can possibly eliminate or reduce populations in a short period of time. Occasionally, armyworm abundance declines after a population of small larvae has been observed. Remember, the fall armyworm has about six larval instars. The last few (5th and 6th) instars are the stages that do the most damage to pastures and hay fields. Of the total grass consumed, greater than 80% to 85% will be eaten by these stages. The best advice is to not get overanxious and treat before necessary. Likewise, do not wait until the worms become too large. Harvesting an infested hay field is a good option when the hay is mature. In contrast, if the field is not ready to cut and you have about three very small (1/8 inch) fall armyworm caterpillars per square foot, continue scouting.

If their abundance does not decline below threshold (three worms/square foot) by the time they reach ½ inch, then treat. Don't wait until armyworms are 1½ inches long because they are about ready to pupate and have likely caused most of the damage they will do. In addition, large worms are harder to kill than smaller ones. Additional information on armyworms can be found in *Managing Armyworms in Pastures and Hayfields* and is available at http://www.uaex.edu/publications/PDF/FSA-7083.pdf.

Per-acre insecticide cost will vary from as low as about $3.00 up to over $10.00. When calculating cost, always consider the cost per acre and not the cost per gallon of product. Also consider residual activity of the product, especially if you are seeing overlapping generations (all sizes of fall armyworm caterpillars) and heavy armyworm pressure. Pyrethroid insecticides such as Karate® (lambda-cyhalothrin), Mustang Max® (zeta-cypermethrin) and Baythroid XL (beta-cyfluthrin) have shorter-duration residual activity. In contrast, products such as Prevathon® (chlorantraniliprole), Besiege® (chlorantraniliprole and lambda-cyhalothrin) and Intrepid® (methoxyfenozide) have longer-duration residual activity and can reduce the number of applications necessary to produce a hay crop. A section 2 (ee) label for Prevathon® recommends 10 to 13 ounces of product per acre for control of fall armyworms, which is considerably less than the product label rate. Research has shown that this lower rate is effective. For additional information on insecticides labeled for use against fall armyworms in pastures and hayfields, check out the Forages section of the *2016 Insecticide Recommendations for Arkansas* available at http://www.uaex.edu/publications/pdf/mp144/c-forages.pdf.

Characteristics of fall armyworm larvae.

Device used to sample fall armyworm (size: 1 square foot constructed from ½ inch PVC pipe).half-inch PVC pipe).

Fall armyworms on thatch.