Louisiana Forage Farmer

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Articles

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LFGC and AFGC Annual Meetings

The Louisiana Forage and Grassland Council (LFGC) will hold its annual meeting on Friday, December 7, 2018 at the LSU AgCenter's Woodrow Dewitt Livestock Barn Facility. The annual meeting program committee will be meeting in August to plan the program for the 2018 annual meeting. If you have any topics that you would like to see on the program, please contact Ed Twidwell at etwidwell@agcenter.lsu.edu. The complete program for the annual meeting will be contained in the next newsletter, which should come out in late-October. For now please mark the date of December 7 in your calendar and plan to attend the annual meeting.

The American Forage and Grassland Council (AFGC) will hold its annual meeting on January 6-9, 2019 in St. Louis, MO. The theme of the meeting will be "Forages: Yesterday, Today and Tomorrow." The keynote speaker will be Dr. Garry Lacefield, who is a retired Forage Extension Specialist from the University of Kentucky. The AFGC will be celebrating its 75th anniversary in 2019. For more information on the conference, contact AFGC Headquarters at www.afgc.org.

Calendar of Events

October 18 Dean Lee Beef Cattle & Forage Field Day
Alexandria, LA
Contact person: Jeff Gurie (jgurie@agcenter.lsu.edu)

October 24 Acadiana Beef Producers Fall Field Day
Abbeville, LA
Contact person: Andrew Granger (agranger@agcenter.lsu.edu)

December 7 LFGC Annual Meeting
Alexandria, LA
Contact person: Ed Twidwell (etwidwell@agcenter.lsu.edu)

Jan. 6-9 AFGC Annual Meeting
St. Louis, MO
Contact person: Tina Bowling (tina.bowling@afgc.org)

Performance of Cool-season Annual Forage Crops in Louisiana

M.W. Alison, C.F. Hutchison, E.K. Twidwell, J. Simmons and G. Williams
LSU AgCenter

Introduction

Winter annual forages are adapted for grazing, green chop, hay and silage production in Louisiana. Each year scientists of the Louisiana State University Agricultural Center conduct performance trials to evaluate the forage production of annual ryegrass and oat varieties. Trials are conducted at various Louisiana State University Agricultural Center research stations throughout the state to provide information on the performance of varieties under varying soil and climatic conditions.

Information provided by these trials is used by Louisiana State University Agricultural Center scientists to develop a list of varieties that have performed satisfactorily in forage performance trials in Louisiana. Louisiana forage producers can use this information to decide on varieties to use in their production systems. To be included on the list of varieties that are considered to have performed satisfactorily from a crop for which several varieties are available, a commercial variety must be tested for three consecutive years and have an average yield not less than 90 percent of the three-year statewide mean of the top three yielding commercial varieties. A variety will be listed as “Promising” if, following two consecutive years of testing, it has shown acceptable agronomic performance and has yielded at least 90 percent of the statewide average of the top three commercial varieties. A variety previously suggested for planting consideration will be dropped from the list if it fails to perform satisfactorily considering both two and three year yield data, if it is no longer commercially available to producers or if not submitted for evaluation.

Testing Procedures

The cool-season annual forage variety testing program is open to all commercially available varieties and advanced experimental lines of annual ryegrass and oats developed by either public or private plant breeding programs. The trials are managed using production practices suggested by the Louisiana Cooperative Extension Service (LCES) for each species, with soil amendments applied

as indicated by soil test and herbicides used as appropriate.

Data on the cumulative forage yield and seasonal distribution of forage yield are collected for each trial to evaluate the adaptation of varieties to specific geographic regions of the state. The trials are conducted in randomized complete-block designs with at least three replications. Plots of each species are cut to a 2- to 4-inch stubble height when growth reaches eight to twelve inches. Cumulative forage yield data are combined across locations and years and analyzed by analysis of variance procedures to evaluate variety yields. The least significant difference (LSD) value represents the minimum amount by which variety yields must differ to be considered statistically different from one another. If differences are not detected among varieties, the LSD value is not presented.

ANNUAL RYEGRASS

Annual ryegrass (*Lolium multiflorum*) is suggested for use as a high-quality winter grazing, hay or silage crop on most soils throughout Louisiana. Annual ryegrass should be planted at rates of 30 pounds per acre if seeded alone or 20 pounds per acre if seeded with another species such as clover. Suggested planting dates for annual ryegrass are between Sept. 20 and Oct. 15 if planted into a prepared seedbed and approximately Oct. 15 if planted into an existing sod.

Annual ryegrass forage variety trials were conducted at three Louisiana State University Agricultural Center research stations during the 2017-18 growing season (Table 1). Lack of rainfall in late summer and into the fall caused delayed planting at all locations. The trial had to be re-planted in January at the Winnsboro site because freezing temperatures caused ground heaving which dislodged emerging seedlings from original planting. Plots at all locations were seeded at the rate of 30 pounds per acre into a prepared seedbed. Phosphorus (P) and potassium (K) fertilizer was applied at all locations according to soil test recommendations made by the Louisiana Cooperative Extension Service. Total nitrogen (N) applied varied among locations but was at least 150 pounds per acre during the growing season and applied in multiple applications during the season.

Table 1. Planting dates and soil types of locations cooperating in the 2017-2018 annual ryegrass variety tests**.**

Research Station	Location	Planting Date	Soil Type
Southeast	Franklinton	October 12, 2017	Tangi silt loam
Iberia	Jeanerette	November 8, 2017	Baldwin silty clay
Macon Ridge	Winnsboro	October 25, 2017	Gigger silt loam

Results of annual ryegrass trials

Annual ryegrass entry, location and statewide yield means over three years are presented in Table 2. Varieties considered to have performed satisfactorily over the past three growing seasons and suggested for consideration in fall 2018 are Diamond T, Double Diamond, Earlyploid, Flying A, Herdsman, Jackson, Jumbo, Maximus, Nelson Tetraploid, Passerel Plus, Prine, RM4L, Spicer, TAMTBO, Triangle T, Wax Marshall and Winterhawk. Promising varieties include Bashaw Tetraploid, Bashaw Diploid and FrostProof. Dry

conditions, extreme drought in some areas, predominated through most of Louisiana during late summer and into November. Ryegrass planting was typically delayed by dry conditions early and then by somewhat excessive rainfall in late November and early December. Conditions causing later planting and periodic extreme declines in temperature delayed forage accumulation so initial harvests tended to be later than normal.

Table 2. Mean dry forage production from annual ryegrass entries at three locations in Louisiana during three growing seasons, 2015-2016 through 2017-2018.

				Mean Eight Year/Location Environments
	Location			
Entry	Franklinton	Winnsboro	Iberia†	Over 3 years‡
	"---------- Dry forage, lb/acre ---------"			
Wax Marshall	10,336	6,572	11,035	9,167
ME4 (expt)□	10,471	6,500	10,442	9,057
Nelson Tetraploid	9,532	6,584	11,504	8,923
Prine	9,989	6,083	11,336	8,917
ME94 (expt)	9,526	6,344	11,346	8,876
Jumbo	9,381	6,575	11,285	8,865
M2CVS (expt)	9,571	6,684	10,710	8,839
RM4L	9,616	5,893	11,302	8,664
TAMTBO	9,241	6,064	11,390	8,634
Double Diamond	9,379	6,090	10,990	8,604
Herdsman	9,151	5,856	11,342	8,513
Triangle T	9,089	6,232	10,768	8,484
Maximus	8,531	6,490	11,054	8,471
EarlyPloid	9,192	5,930	11,121	8,465
Passerel Plus	9,136	6,137	10,337	8,417
Flying A	7,875	6,580	11,659	8,399
Winterhawk	8,726	6,416	10,641	8,394
Jackson	8,965	6,192	10,312	8,325
Diamond T	8,328	6,284	10,984	8,292
Spicer	8,451	6,084	10,939	8,205
PS15 (expt)	8,403	6,007	10,362	8,041
Gulf (certified)	7,638	6,014	11,080	7,941
Mean	9,115	6,255	10,997	8,568
LSD (.1)	821	426	NS	483
CV%	12	9	13	7

†Only data from 2015-2016 and 2017-2018 growing seasons included in mean yields from Iberia.

‡Includes data from only two growing seasons (2015-2016 and 2017-2018) from Iberia location.

□Entries followed by (expt) are experimental and not commercially available.

Annual Ryegrass Biomass Production Following the Application of Biowash100

R. Lemus and J.A. White
Mississippi State University

Fertility deficiency, especially nitrogen, affects forage production on a large scale and is one of the most common nutritional problems among livestock producers. A host of products commonly known as additives or enhancers typically include stabilizers, adjuvants, or plant growth regulators have been marketed to enhance nitrogen activity. A two-year study was conducted to examine the effects of BioWash100 on biomass production, nutrient uptake and nutritive value of "Marshall' annual ryegrass. The study was conducted in Starkville, Mississippi. The experimental design was a randomized complete block with six treatments replicated four times. The treatments included a control, BioWash100 applied at two rates (5 and 10 oz/acre), 32% AUN (50 lb N/acre), and AUN plus BioWash100 rates. Annual ryegrass was planted with a drill at a rate of 20 lbs/acre in a prepared seedbed. First treatment application occurred after germination when plants have reached 3 inches of growth and each subsequent treatment was applied three days after harvest. Nitrogen was applied not to exceed 150 lbs N/acre/year. Treatments were harvested when at least 50% of the plots had reached 12 to 15 inches of growth. Forage yields of plots receiving BioWash100 only, were similar to the control at both rates of application. Adding BioWash100 to the liquid urea ammonium nitrate did not provide a significant increase in seasonal or harvest yield. Very little effect was observed in the nutritive value of annual ryegrass with BioWash100 application.

Source: 2018 AFGC Proceedings

Alternatives to Conventional Nitrogen Fertilization on Tall Fescue and Bermudagrass

M.D. Corbin, R.L.G. Nave, G.E. Bates, D.M. Butler and S.A. Hawkins
University of Tennessee

Alternatives to conventional nitrogen (N) fertilization on tall fescue and bermudagrass were studied at the University of Tennessee Plateau Research and Education Center in Crossville, TN. Experimental period occurred from April-September 2016 and 2017, and the experimental design for each experiment was a completely randomized block design with six treatments and four replications per treatment (n=24). Experiment I: tall fescue and experiment 2: bermudagrass. For both experiments treatments were as followed: 1) control (CN) without N fertilization; 2) grass and white clover (WC) at a rate of 4 lbs/acre; 3) grass and red clover (RC) at a rate of 8 lbs/acre; 4) grass and cowpea (CW) at a rate of 50 lbs/acre; 5) fertilization with broiler litter at a rate of 2 tons/acre; and 6) fertilization with ammonium nitrate (AN) at a rate of 60 lbs/acre. For each analysis, the dependent variable was herbage mass (HM), crude protein (CP), acid detergent fiber and

neutral detergent fiber. Red clover treatments resulted in highest for total HM for 2017 in tall fescue and highest for HM for 2016 and 2017 in bermudagrass. Treatments containing BL and AN showed no differences for total HM and CP for 2016 and 2017 in both experiments. Treatments containing CW presented over-all lower results compared to other treatments. Utilizing these results in combination with cost associated with each source could assist producers in choosing a productively efficient source of N or a method of reducing their amount and annual overall cost associated with conventional N.

Source: 2018 AFGC Proceedings

Yield Monitoring, Mapping and Variable Rate Fertilization for Hay and Silage Production

K.K. Kirk, P.J. Loftus, J.G. Andrae and G.S. Sell
Clemson University

Precision agriculture technologies associated with row crop production can be equally beneficial to forage crops. One key aspect of precision agriculture allows the producer to assess and manage for spatial variability in his fields; simply put, different areas of each field have different needs.

While most growers generally know where high and low yielding areas of each field are, a yield map can quantify and delineate this understanding. Unfortunately, no yield monitors have been developed or are commercially available for forage crops. We have recently developed and field-tested a windrow monitor based on ultrasound technology which allows forage yield mapping. One important application of this knowledge for forage production would be in the form of variable rate nutrient application. Knowledge from the yield map of the amounts of nutrients being removed from the field can be applied to return nutrients for the subsequent harvests; the yield map can provide guidance on how to subdivide the field into separate management zones, each receiving different nutrient rates according to need. Uniform nutrient applications “to meet the average needs” result in under-application and therefore yield deficits in the most productive areas of the field and over-application and waste in the least productive areas. The goal of variable rate nutrient application is not to equalize yields across the field, but to place nutrients at appropriate rates according to need. Variable rate nitrogen applications and yield monitoring technologies have also been tested.

Source: 2018 AFGC Proceedings