Louisiana Forage Farmer

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Calendar of Events

October 19
Dean Lee Research Station Beef Cattle and Forage Field Day
Alexandria, LA
2:30 p.m. – 6:00 p.m.
Contact: Glenn Gentry (225-683-5848)

October 21
Acadiana Cattle Producers Fall Field Day
UL Cade Farm, Cade, LA
8:30 a.m. – 1:30 p.m.
Contact: Stan Dutile (337-291-7090)

December 8
LFGC Annual Meeting
Alexandria, LA
8:30 a.m. – 1:30 p.m.
Contact: Ed Twidwell (225-281-9448)

LFGC and AFGC Annual Meetings

The LFGC annual meeting will be held on Friday, December 8, 2017 at the DeWitt Livestock Facility on the campus of LSU-A in Alexandria. The program is almost complete for this meeting, and will focus on clover research, the practice of leader/follower grazing management and the importance of pollinators for legume production. Please mark this date on your calendar and plan to attend. The complete agenda will be included in the next edition of this newsletter.

The AFGC annual meeting will be held on January 14-17, 2018 in Louisville, Kentucky. The theme of the meeting is "Forages: Opportunities for the Next Generation". The meeting will have workshops on clover management, horse pasture management, integrated crop-livestock systems, producing quality hay in a humid environment and new technology in grassland agriculture. The meeting will also feature the Forage Spokesperson Contest for producers and the Emerging Scientist Contest for graduate students. For additional information, contact AFGC Headquarters at www.afgc.org.

Farmer’s Priority List: Soil, Forage, Cattle

Harvey Gonsoulin of New Iberia retired from a career with Farm Credit in 2001. However, he didn’t really retire--he remade his farm into a grassfed beef operation. But he didn’t start with the cattle, and he didn’t start with the forage. He started with the soil.

The farm had been rented out for growing sugar cane and over two years it was converted to fit Harvey’s plan. He first improved the drainage and then developed his pastures, diligently improving the soil. His main tools for developing healthy, productive soil are management intensive grazing and no tillage. “I feel I am a steward of the land,” he said.

Using management intensive grazing, his cattle are moved frequently from one paddock to another. He has a herd of 35 to 40 mama cows and also custom grazes stocker calves. In winter, the stockers are concentrated on small acreages of ryegrass and clover. That means manure and urine are also concentrated, contributing nutrients to the soil. In addition, as the winter grasses mature and die, their roots add to the organic matter in the soil. Everything is planted with a no-till drill, so the soil is minimally disturbed.

His calves are sold to the grassfed market. Because animals sold as grassfed can’t eat any grain at all, the quality of his forage is of utmost importance. In winter, ryegrass and clover provide the level of nutrition needed to keep the calves growing, gaining as much as 3-plus pounds per day. In an ideal year, the ryegrass and clover can be grazed from December 1 to May 31. But of course all years aren’t ideal, so in some winters grazing doesn’t start until January or February.

Harvey prefers to use as little hay as possible. Some of his hay is cut from his farm and some is purchased. To keep top-quality pastures, he has planted various forages, including brassicas. Ball, white, and berseem are some of the clovers he depends on.

Keeping up the rate of gain in summer is a challenge. He utilizes alyce clover and has also planted forage corn, sorghum-sudan grass, and peas to supplement warm-season grasses. “I’m not afraid to experiment with forages,” he stated. No matter what the forage, Louisiana heat means the calves prefer to be under the trees during the hottest part of the day.

Stockers not reaching 1000 pounds by the time the ryegrass matures are often sold to other grassfed producers who continue to graze them until they reach market weight. "Stockers from my place seldom reach 1000 pounds by January or February," he said. "They reach that weight in May or June after having been on grass for 120-150 days."

Soil tests are done every three years. Those tests show that the fertility and quality of his soil is improving. In 2016 results showed that at four inches deep, the organic matter was 7 to 11 per cent. Harvey sees minimal run-off from his pastures after a rain. He said the water that gets into the ditches is clear, in contrast to the silt carried onto his land from his neighbors.

His cattle are primarily Red Angus, along with some crossbred cows. He said black cattle do not do as well on his place because not all of his pastures have shade.

He added that he appreciates the information, workshops and collaboration he gets from Dr. Guillermo Scaglia and Dr. Ed Twidwell of LSU. "They are good to work with and want to find answers," Harvey said.

Performance of Cool-season Annual Forage Crops in Louisiana, 2016-2017

M.W. Alison, E.K. Twidwell, Maria Milczarek, Jerry Simmons and Gregg Williams

LSU Agricultural Center

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.

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 2016-17 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 2016-2017 annual ryegrass variety tests**.**

Research Station	Location	Planting Date	Soil Type
Southeast	Franklinton	November 8, 2016	Tangi silt loam
Iberia	Jeanerette	November 18, 2016	Baldwin silty clay
Macon Ridge	Winnsboro	January 14, 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 2017 are Attain, Big Boss, Diamond T, Earlyploid, Flying A, Fria, Jackson, Jumbo, Lone Star, Marshall, Nelson Tetraploid, Passerel Plus, Prine, RM4L, TAMTBO, Tetrastar and Winterhawk. 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, 2014-2015 through 2016-2017.

Entry	Location			Mean Eight Year/Location Environments
	Franklinton	Winnsboro	Jeanerette†	Over 3 years‡
	---------------------- Dry forage, lb/acre ---------------------			
Nelson Tetraploid	9662	7404	15232	10207
Marshall	9549	7768	13813	9947
ME4 (expt)□	9661	7540	13447	9812
Prine	9604	6906	14406	9792
ME94 (expt)	9069	7424	14015	9689
EarlyPloid	9188	6661	14924	9674
RM4L	9070	6971	14475	9634
Jackson	9081	7163	13913	9570
Big Boss	9088	7216	13680	9534
TAMTBO	8440	6894	15062	9516
Jumbo	9001	7293	13584	9506
M2CVS (expt)	9189	7851	12422	9496
Double Diamond (expt)	8821	6982	14224	9482
Fria	8647	7430	13806	9480
Tetrastar	8175	7023	14935	9433
Winterhawk	8777	7068	13835	9400
Triangle T (expt)	8908	7008	13575	9362
Diamond T	7921	7013	14511	9228
Lone Star	8185	6843	13993	9134
Attain	8540	7002	13221	9134
Flying A	7532	7625	13717	9113
Passerel Plus	8819	7183	12009	9003
Gulf (certified)	7519	6796	14319	8948
Maximus	8346	7146	12373	8903
Mean	8783	7175	13895	9458
LSD (.1)	855	405	1444	547
CV (%)	12	7	13	7

†Jeanerette location includes only 2 years (2014-2015 and 2015-2016 growing seasons).

‡Includes data from 3 locations but only 2 years from Jeanerette location

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

Stockpiling Perennial Warm-Season Forage Grasses In East-Central Mississippi

B. Rushing, M. Thornton and R. Lemus
Mississippi State University

Stockpiling warm-season perennial grass for fall and winter grazing is a management practice that can lower livestock production costs and extend the grazing season. Two seeded bermudagrass and two bahiagrass cultivars were compared in a small plot field trial in east-central Mississippi. Each cultivar had four nitrogen treatments (0, 25, 50 and 75 lb N/acre) with four harvest dates (30, 60, 90 and 120 days after N application) during fall and winter of 2015 and 2016. Plots were sampled to monitor dry matter (DM), nutritive value, sward height, normalized differential vegetation index and leaf area index. Total digestible nutrients (TDN) and relative feed quality (RFQ) were calculated based on nutritive values. In 2015 cumulative forage biomass was less than 2673 lb DM/acre for all cultivars. Crude protein values for all cultivars in 2015 were greater than 11% for all harvests and increased with time. Bahiagrass cultivars generally had greater crude protein than bermudagrass cultivars, with all cultivars remaining above minimum requirements for mature, non-lactating pregnant beef cows (7-8%). Acid detergent and neutral detergent fiber increased with time for all entries, with the largest monthly increase occurring in the harvest following a killing frost. TDN and RFQ values suggest energy requirements for beef livestock cannot be met with these standing forages, thus necessitating high energy supplements.

Source: 2017 AFGC Proceedings

The Dung Diaries: How Different Beetle Groups Affect Dung-Mediated Greenhouse Gas Production

Fallon Fowler, Steve Denning, Shuijin Hu and Wes Watson
North Carolina State University

Livestock pose a serious problem to the world's sustainability and health. Cattle alone produce about 11% of the world's total greenhouse gases with nearly a third of that produced by cattle dung. Unused or improperly decomposed dung produces the majority of greenhouse gases so it changes from being a beneficial process for soil and plants to an influential driver of global warming. Demand for cattle will likely not waiver; human population will continue growing and so will demand for meat, milk, and arable land. Supporting cost-effective sustainability practices in an expanding livestock sector will become increasingly relevant on a local, if not global, scale. However, there may be a natural solution – dung beetles. Dung beetles are thought to prevent fertilizer waste through the process of mineralization and prevent greenhouse gas production though dung aeration. In summary, dung beetles may reincorporate carbon and nitrogen from greenhouse gases into soil nutrients instead. My research examines whether different kinds of dung beetle groups (Rollers, Tunnelers, Dwellers), alone or in combination, help to efficiently mitigate dung-produced greenhouse gases (CO_2, CH_4, N_2O) and improve soil health. Preliminary data indicate that: 1) dung beetles decrease CH_4, but increase CO_2 and N_2O levels; 2) dung moisture content is correlated with greenhouse gas reduction; and 3) distinct dung beetle groups similarly affect greenhouse gas fluxes. In the future, I plan to document the effect of wild dung beetle communities on natural greenhouse gas fluxes to that I may establish how quantity, time colonization and species influence a farm's sustainability.

Source: 2017 AFGC Proceedings

Opportunities For Yield Monitoring In Hay Production

Kendall R. Kirk, G. Scott Sell, John Andrae and Perry Loftus

Clemson University

Yield monitors are a decades-old technology on row crop farms, being commercially available for corn, small grains and cotton. Many of today's grain combines are equipped with yield monitors as standard equipment. Although work has been done to evaluate and develop yield monitoring systems for hay production, only one system is commercially available and yield monitors are not broadly utilized in hay production. Among the top ten U.S. crops by acreage and the top six U.S. crops by value, hay is third in rank and the only one of these crops where a yield monitor is not widely implemented. The relative absence of yield monitoring for hay production is due to a combination of factors: economies of scale, relative crop management intensity and crop value per unit area, and grower access to complementary technologies.

Being "late-in-the-game" in adoption and development of hay yield monitoring technologies offers a number of benefits and opportunities. Many lessons learned relative to application of yield data in guiding row crop management decisions are transferrable to hay production. Additionally, if hay yield monitors can be developed to be compatible with existing, commercial row crop yield documentation platforms, cost of hay yield monitoring systems will be reduced due to pre-existing sales volumes. Commercialization of a hay yield monitoring system that is suitable for use across all types and manufacturers of balers will be capable of minimizing per unit fixed costs and therefore also minimizing retail prices.

When coupled with a global positioning system, hay yield data can be shown as a map with spatial relationships of the low- and high-yielding areas in a field. By itself, a crop yield monitor generates no reduction in production costs or increases in yield or profit, so determining a generic return on investment for row crop yield monitors has been challenging. However, data collected from the yield monitor can drive management decisions resulting in increased profitability and generally demonstrating payoff periods of one to two years.

A universal application of a hay yield monitor is for direction of crop input rates. A Clemson University study, the beginning of a long-term study with multiple crop inputs, used a hay yield monitor to reveal how profit might be increased in hay production. Prior to onset of this study, this was an intensively managed, irrigated Tifton-85 field with a fixed application of 100 lb N/acre between cuttings. Yield results from this test suggested that if a fixed nitrogen rate was applied across the field, application of 60 lb N/acre would result in $12/acre more profit per cutting when compared to the 100 lb N/acre rate. If yield management zones were utilized for assignment of nitrogen rate by zone, data suggest that profit would have been $4.50/acre greater per cutting than at the 60 lb N/acre fixed rate. Finally, the Clemson University Directed Prescriptions system suggested that profit would have been $14.50/acre greater per cutting than at the 60 lb N/acre fixed rate. Environmental stewardship is also improved; when practiced properly, both zone management and directed prescriptions optimize nutrient use in the field, reducing over-application.

The value of any yield monitoring system is dependent on how its information is used to improve management. Return on investment must be evaluated on a case-by-case and farm-by-farm basis. With four cuttings per year, the study discussed here conservatively demonstrated in excess of $50/acre/year potential benefit from implementation of yield data in prescribing nitrogen rates. If a hay yield monitoring system retailed for $7,500, the data collected here suggests that the system could be paid for in only 150 acres of annual hay production – in nitrogen savings alone.

Source: 2017 AFGC Proceedings

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