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VOLUME 1 ISSUE 1

Iberia Research Station News



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Comments from H.P. "Sonny" Viator

This newsletter is the first in a series to inform our clientele and the general public about faculty and staff activities at the Iberia Research Station. We are making the series available on the Internet and by e-mail. It is not intended to replace articles found in traditional publications such as the Sugarcane Research Annual Progress reports or the Beef Cattle Research reports. Those and related publications contain more technical information and research summaries while this newsletter provides profiles of research projects, updates on facility and personnel changes, notices about public events and miscellaneous "news and notes." We anticipate it will evolve over time to possibly include topics such as recommended practices and guidelines for implementing procedures that enhance production, which are extension or outreach efforts.

This issue contains an announcement of the hiring of Dr. Guillermo Scaglia, a native of Uruguay who will be conducting nutrition research. His specialties include animal behavior as it relates to performance and the production of forage-fed beef. The Iberia Research Station has a very long history of conducting beef cattle research, extending back to almost the beginning of the 20th century. Research on other commodities of importance to the area, especially sugarcane, is more recent. Our broad mission is to investigate practices and methods that could result in affecting efficiency and profitability of beef cattle and sugarcane farming operations. Also, Mr. Thomas Hymel of the Louisiana Cooperative Extension Service is stationed at our unit and is responsible for extension activities on environmental and watershed matters. We hope you will find this newsletter useful and informative and invite you to suggest the names and e-mail addresses of others who could profit from receiving our newsletter.

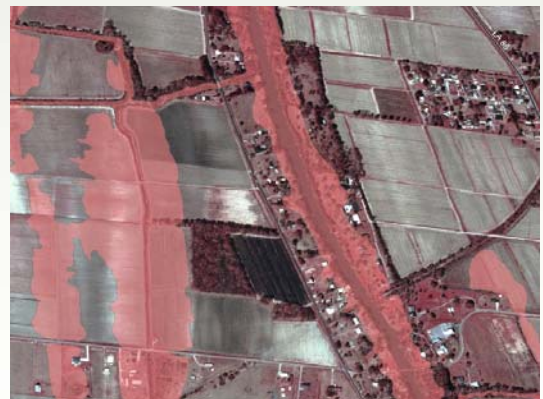
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SPECIAL POINTS OF INTEREST:

- Sugarcane growth measurements are available by request from:
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New Flood Insurance Rate Maps Proposed for Coastal Parishes

Prior to the devastation in Louisiana caused by hurricanes Katrina and Rita, FEMA had begun a nationwide effort to update flood hazard maps in flood-prone communities. This map-modernization project began in 2003, and the new proposed DFIRMS or "digital flood insurance rate maps" are now being introduced to 15 coastal parishes for review and adoption.



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New Flood Insurance Rate Maps Proposed for Coastal Parishes Cont.

The proposed FIRM's and Flood Insurance Study (FIS) reports were developed from sophisticated storm surge models that analyzed a wide variety of hurricane, landscape and hydrologic features. The updated flood maps will profoundly impact our understanding of the risks associated with living in the coastal zone of Louisiana:

- The new flood data and resulting DFIRMs will show the extent to which areas of the parishes including individual properties are at risk of flooding.
- The new DFIRMs will help homeowners and business owners understand their current flood risk and enable more informed financial decisions about protecting their property.
- The new DFIRMs will aid the insurance agents and lenders who are responsible for implementing the insurance requirements of the NFIP.

The new DFIRMs will allow community planners, local officials, engineers, builders and others make important determinations about where and how to build new structures and developments to maximize the safety of citizens

Additional in-depth information and proposed DFIRM online maps can be viewed at the Louisiana Mapping Project (LaMP) Web site: <http://www.lamappingproject.com/>

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Genetic Evaluation of Temperament in Beef Heifers

In the fall of 2003, Dr. Wayne Wyatt began participating in a regional project examining the extent to which genetics control temperament. The study has involved approximately 130 Angus (16 sires) and 65 Brangus (14 sires) replacement heifers (spring-born, fall-weaned) over a five-year period at the station. Data were collected on heifers here and other AgCenter research stations (Central and Hill Farm) and from other states (Arkansas, Florida, Georgia, Kentucky, Mississippi, Oklahoma and Texas) for genetic analyses. (This type of analyses requires many heifers, typically more than any one station can provide).

What is our interest in temperament or disposition? Quite a bit of research has shown that carcass and meat quality are affected by temperament. In general terms, the more excitable an animal is, the tougher the meat will be. Also, those animals often may not gain weight as efficiently as calmer animals. Our interest is in the effect differences in temperament (disposition) may have on heifer productivity. It is easy for us to assume that the more excitable heifers may not perform as well in terms of reproductive development and performance. Unfortunately, we don't know whether an excitable animal is such because of the way she has been handled and reared or because she may be genetically programmed to be such. We want to know the extent to which temperament in heifers is under genetic control. If temperament is sufficiently affected by the genetics of an animal, we may be able to select for calmer animals.

How do we measure temperament or disposition? We have chosen a couple of measures. We score an animal for temperament while standing in a squeeze chute (1 = calm, stands still, no movement; 2 = slightly restless; 3 = restless, shaking chute; 4 = vigorously shaking the chute; and 5 = berserk frenzy). We also measure the speed an animal exits the squeeze chute. Faster exit velocities are associated with more excitable animals.

So, what have you found out thus far? We have done some preliminary analyses, but remember, we need to combine all the data from all the locations in Louisiana and the other states to really be able to say anything definite. Dr. Sid DeRouen at the Hill Farm research station (Homer), Dr. Don Franke's from the Central Station research station (Baton Rouge) and our data were combined for heifers born in 2003 through 2006. We found that

Genetic Evaluation of Temperament in Beef Heifers

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increased postweaning gains in heifers were associated with lower (more desirable) temperament measures (both exit velocity and chute scores). We also found that pregnancy rate tended to improve with slower (more docile) heifers compared to those that were scored higher (more excitable). More important, we found that some sires tended to have more excitable daughters while other sires had more calm daughters. The importance of this is that it would appear that temperament is in part controlled by genetics and that we might be able to select daughters from sires known for calmness in their heifers. This would have an impact of increasing heifer postweaning weight gain and improving percent pregnancy rate for calving at 2 years of age. Both of these traits are important in any heifer development program.

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Mr. Jeff Wuenschel, beef research associate at the Iberia Research Station, knows that calm temperament (disposition) is an important trait in choosing Angus and Brangus heifers as herd replacements.

Investigation of the Effects of Sugarcane Post-harvest Residue Management on Water Quality

Louisiana sugarcane growers are increasingly combining fields "green," without burning to eliminate leafy material. The post-harvest residue, however, is generally burned on the ground to avoid the debilitating effects of the residue on the subsequent ratoon crop in the production cycle. A best management practice (BMP) that allows for the retention of the residue to minimize surface runoff and increase the fertility status of the soil would be viewed as both environmentally and producer-friendly. A study conducted over two seasons evaluated the effects of four post-harvest residue management treatments on surface water quality and sugarcane development and yield at two locations in the Vermilion-Teche watershed. Treatments included two approaches designed to mitigate the adverse effects of retained residue on sugarcane: (1) the application of stabilized urea plus composted tea and the shredding of the residue for accelerated decomposition; and (2) two treatments currently employed by the industry — ground burning of the residue and full post-harvest retention of the residue.

End-of-field collections were made using automated samplers. Rainfall collection-event load averages for all of the principal water quality parameters, sediment, biological oxygen demand, nitrogen and phosphorus, for the four residue management treatments did not differ significantly. Seasonal variation in sediment removal, however, suggests the exposed soil surface resulting from residue burning was more at risk to erosion than the residue retained treatment. Neither of the residue-management treatments designed to hasten decomposition was effective, with the urea-compost tea treatment producing elevated levels of nitrogen in runoff and the shredded-residue treatment generating the numerically greatest amount of surface runoff. Treatment differences for cane and sugar yield were not significant at either location. The failure of the evaluated post-harvest residue

management practices to influence yield or water quality parameters differentially does not give the sugar industry new options for residue management. Soil loss measured for the runoff events sampled was moderate and within the "acceptable" range of 2 to 5 tons of soil loss per acre per year. Without viable alternatives, growers will continue to burn until a management practice (s) is identified that utilizes the residue to reduce runoff and enhance soil fertility while minimizing the impact of residue on the subsequent crops. Prescribed burning is a BMP that encourages growers to use proven guidelines to manage smoke and large particulates. Like a number of other agricultural industries that use prescribed burning, the Louisiana sugarcane industry will continue to research ways to eliminate burning. Currently, effort is being made to identify sugarcane varieties that tolerate the residue blanket and to search for amendments that alleviate the yield-limiting effects of the retained residue.

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Water capture and sampling devices consisted of flumes and automated samplers energized by solar-powered batteries.

Ruminant Nutritionist Joins Iberia Research Station

Dr. Guillermo Scaglia was born and raised in Uruguay, South America. Dr Scaglia had an early interest in agricultural sciences, which led him to attend college and earn his B.S. in crops and livestock production. After graduation, he worked as a research scientist at the National Institute of Agricultural Research (INIA) of Uruguay for two years. In 1992, he was awarded a scholarship from the Inter-American Development Bank to pursue his M.S. in animal science (ruminant nutrition) at Texas A&M University where he worked under the guidance of Dr. William (Bill) Ellis. In 1994, he returned to Uruguay and worked at INIA for five years. At that time, his research included cow-calf nutrition and management and the development of beef and lamb forage-finishing systems. In 2002, he earned his Ph.D. in ruminant nutrition at Texas A&M University (his major advisor was Dr. Wayne Greene) and immediately joined the Department of Animal and Poultry Sciences at

Virginia Tech, first as a post-doctoral research associate and then as an assistant professor. His research focused on the evaluation of forage systems for cow/calf production, the impact of weaning strategies on performance and health of calves during backgrounding and the development of forage-fed beef systems for small producers in the Appalachia region. In December 2007, he joined the LSU AgCenter as a faculty member at the Iberia Research Station. Dr Scaglia's research interests are in ruminant nutrition and forage utilization. Emphasis will be placed on improving the utilization (grazing methods, supplementation, etc.) of standing and conserved forages (intake, digestibility and digesta kinetics) in the Gulf Coast, production of sustainable forage-fed beef and grazing behavior in ruminants. Nutritional and management alternatives will be developed to improve growth, development, efficiency of production and carcass merit in beef cattle.

Pilot Study: GIS Mapping of Crawfish Acreage in Louisiana

SITUATION

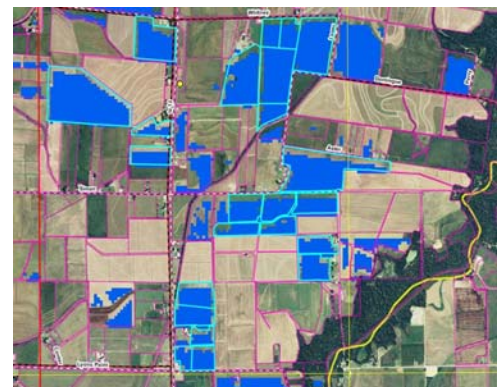
In Louisiana, crawfish farmers are not required to report production area and yield. Major discrepancies exist between production statistics reported annually by the Louisiana Cooperative Extension Service and surveys of the U.S. Department of Agriculture with federal estimates being one-third of that estimated by the LCES. Federal appropriations to aquaculture producers for disaster relief are usually based on area and production estimates from federal agencies. The application of geographical information systems (GIS) to crawfish aquaculture provides a useful tool for mapping production areas and monitoring land-use changes over time.

PREVIOUS WORK

Mapping of crawfish aquaculture area using aerial photography and field visits has been conducted for St. Martin and Acadia parishes, two of the largest crawfish farming parishes in Louisiana. Crawfish acreage as estimated by GIS mapping in St. Martin parish was 18% higher than that reported in the 2004 Ag Summary and 100% higher than reported in Acadia parish. The St. Martin and Acadia projects resulted in the best acreage data to date, but the methods used were extremely time-consuming and difficult to duplicate statewide.

PILOT STUDY

A crawfish acreage pilot study was initiated by the AgCenter during the 2007-08 season. The objective was to begin development of a GIS method to determine crawfish acreage that was accurate, quick and repeatable each year. A study was conducted in a region of Vermilion parish with high crawfish pond concentration. Commercially available LANDSAT and SPOT satellite imagery was used along with GPS field mapping as a ground-truth survey method. We determined location and size of crawfish ponds by analyzing spectral signatures of pond water contained in the satellite imagery taken on dates after ponds had been flooded (late Oct-Nov 2007). We also utilized trap lane patterns evident in imagery collected in February 2008 to determine crawfish pond locations. The results of this pilot work indicated we could reliably locate the majority of ponds and determine acreage using GIS methods in conjunction with industry input and local knowledge. Work on the acreage study will continue through the 2008-09 crawfish season with hopes of finally producing a verifiable estimate of Louisiana crawfish acreage.



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View our Web site: lsuagcenter.com/en/our_offices/research_stations/Iberia/

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