# The W.A. Callegari Environmental Center

is the LSU AgCenter's research and training facility for composting organic waste and for water and air quality. Located on an 8-acre site on the Central Research Station south of Baton Rouge, the Callegari Center serves researchers, agricultural producers, private companies, governmental agencies and the general public in the areas of **composting**, **water quality**, **air quality** and **bio-energy**.



## composting

### Composting

The natural decomposition of organic matter in soils may take years to generate beneficial, stable soil organic matter—humus. In contrast, composting is a controlled process that uses microorganisms found in nature to transform large quantities of organic materials into a humus-like substance called compost. Quality compost may be produced in a few months and provides numerous environmentally beneficial applications.

The Callegari Center laboratory uses a series of large reactors and simulation models to predict large-scale results. The center handles materials that would otherwise have gone to landfill or incineration.



The Callegari Center initiated a three-year project in 2002 to examine the value of in-house composting of poultry litter. Poultry litter has become a disposal problem for producers, who were running out of places to apply this product as fertilizer. The AgCenter process reduces pathogenic microorganisms, moisture and ammonia in the litter, in effect sanitizing it and allowing it to be reused.



The Callegari Center also developed a recipe and performed analyses for a composting trial for poultry production mortality in an automated, closed-vessel composting system. The trial provided data for the Louisiana Department of Agriculture and Forestry approval of a closed-vessel system for composting daily poultry production mortality.

## water quality

### Water Quality

The Callegari Center serves as the home for the **Louisiana Master Farmer Program**, which helps agricultural producers voluntarily address the environmental concerns related to production agriculture, as well as enhance their production and resource-management skills that will be critical for the continued viability of Louisiana agriculture. This program helps producers become more knowledgeable about environmental stewardship, resource-based production and resource management through a voluntary producer certification process.

Integral to the Master Farmer Program is the Callegari Center's analytical services for water quality. In addition to serving agricultural interests, the laboratories provide research capabilities for AgCenter scientists, private industry and local governments. The laboratories can perform more than 40 analytical procedures from simple to sophisticated to determine the chemicals in water and solid and semi-solid materials. Materials that can be tested include





- Agricultural runoff water (ditches or sediment ponds)
- Ambient water (ponds and streams)
- Well water (non-potable)
- Drinking water (screening for contaminants only)
- Animal wastes and lagoons
- Organic byproducts (agricultural residues, agricultural processing wastes, wood and green wastes, municipal biosolids and wastewater sludges, etc.)
- Composts and organic soil amendments (non-fertilizer sources)

In 2005 the Callegari Center completed a pair of laboratories for evaluating water quality. The labs are used to quantify nutrients and sediments in runoff water from farm fields that use crop-specific best management practices. AgCenter investigators also use the laboratory services to evaluate alternative uses for dairy manure, including biomass energy production through liquefaction. The laboratories also provide private well and pond owners with low-cost analyses. They also played a significant role in analyzing water samples for potential toxic and pathogenic elements following hurricanes Katrina and Rita.



In addition to analytical capabilities, the Callegari Center can provide support to individuals concerning a wide range of environmental issues based on sound analytical results. The water quality laboratory employs specific analytical methodologies approved by the United States Environmental Protection Agency and the Louisiana Department of Environmental Quality for accredited water, waste water and biosolids analyses. A **United States Composting Council's STA Program**-complaint lab, the lab uses the latest analytical methods for organic waste and compost analysis.

## air quality

### Air Quality

In response to public concern about sugarcane burning, the Callegari Center worked with the American Sugarcane League and the Louisiana Department of Agriculture and Forestry to develop smoke management guidelines for sugarcane harvesting. The guidelines are intended to manage smoke and ash from sugarcane prescribed bruning operations to lessen their effects on public health and welfare.



Burning sugarcane in the field gives producers lower production costs, efficient harvesting and less material to transport to mills. The AgCenter developed the training curriculum, and hundreds of Louisiana sugarcane farmers have been acknowledged as certified prescribed-burn managers.

## bio-energy

### Bio-energy

The Callegari Center has taken an active part in the AgCenter's research into bio-energy – the development of alternative fuels such as ethanol and bio-diesel. In addition to laboratory evaluations, AgCenter researchers are planting test plots of different crops that could be used as the feedstocks of bio-fuels. Along with traditional food crops such as corn, soybeans, sugarcane, sorghum and sunflowers, scientists are evaluating non-food crops such as rape seed, Chinese tallow and palm oil.





Chinese tallow

Plans at the Callegari Center envision constructing a bio-diesel plant, including a seed press, and establishing laboratories to characterize the fuel products and measure quality control.

## W. A. Callegari Environmental Center

# Water Quality and Organic Degradation Research and Analytical Laboratories

The W. A. Callegari Environmental Center Water Quality and Organic Degradation Research and Analytical Laboratories (ODRAL) staff is available to answer questions concerning submitting samples for analysis, sample preparation, preservation and storage. The laboratory can furnish results on your sample within a minimum time. The facility is located at:

1300 Dean Lee Drive
Baton Rouge, LA 70820
Phone: (225)765-5155
Fax: (225)765-5158

Our water quality laboratory employs specific analytical methodologies approved by the United States Environmental Protection Agency (U.S. EPA) and Louisiana Department of Environmental Quality (LDEQ) for accredited water, waste water and biosolids analyses. Being a United States Composting Council's STA Program-complaint lab, the ODRAL uses the latest analytical methods for organic waste and compost analysis, the USCC Test Methods for the Examination of Composting and Compost (TMECC). Our labs follow a quality assurance program that is consistent with International Standards of Operation (ISO) 17025.

As a part of the LSU AgCenter, our focus is public service. The knowledgable faculty and staff at the W. A. Callegari Environmental Center can provide support to individuals concerning a wide range of environmental issues based on sound analytical results.

## W.A. Callegari ENVIRONMENTAL Center

### *William and Ann Callegari*

William Callegari, who was born in Cottonport, is a water and waste water consultant in Houston, Texas. He received his bachelor's degree in agricultural engineering from LSU in 1963. A mechanical engineer who designed wastewater treatment plants, Callegari recognized the need for environmental quality research and training in Louisiana.

In 1998 with a $100,000 pledge from William and Ann Callegari and matching funds from the AgCenter, the W.A. Callegari Environmental Center expanded to an eight-acre site with an 8,500-square-foot building and a larger mission.

*. . . helping to improve environmental quality, profitability and standards of living for Louisiana residents and industries.*

**Dr. William A. Carney,**
Coordinator for the W.A. Callegari Environmental Center
Louisiana State University Agricultural Center
P.O. Box 25100, Baton Rouge, LA 70894-5100.
Phone: (225) 578-6998. Fax: (225) 578-2478.
Email: bcarney@agctr.lsu.edu.

**Louisiana State University Agricultural Center**
William B. Richardson, Chancellor
**Louisiana Agricultural Experiment Station**
David J. Boethel, Vice Chancellor and Director
**Louisiana Cooperative Extension Service**
Paul D. Coreil, Vice Chancellor and Director

**Visit our Web site:**
**www.lsuagcenter.com**

The LSU AgCenter provides equal opportunities in programs and employment.

## W.A. Callegari ENVIRONMENTAL Center

*air quality*
*bio-energy*
*composting*
*water quality*

