

Safety and adding value focuses of food research



Bob Ratliff

Packaging research is part of the work of the Food Science Institute.

Crop production and management has traditionally been the largest component of MAFES research, but work with the food items produced from Mississippi crops also is a major research area.

When the Mississippi Experiment Station was established on the Mississippi A&M College campus in 1888, the surrounding county, Oktibbeha, was known as the “Dairy Capital of the South.” As a result, much of the early food research at the station was with dairy products.

Cheese, milk and other dairy products are still the subjects of MAFES research.

MAFES scientists in the Department of Food Science and Technology also are working to find ways to add value to items produced on Mississippi farms. Their work includes developing new packaging and processing methods for products such as beef, poultry, pork and farm-raised catfish and the development of new products from sweetpotatoes, blueberries and other crops.

Food safety also is an important part of MAFES research, with scientists on the Starkville campus working with colleagues at the Seafood Processing Laboratory, the U.S.



Marco Niconich

Food science and technology student Carrie Swoope participates in a sensory evaluation.

Department of Agriculture’s Gulf Coast Seafood Laboratory and industry to improve the safety of products available to consumers.

While food research is one of the oldest areas of MAFES work, it’s also one that is taking advantage of new technology to support the work of Mississippians engaged in enterprises that provide safe and nutritious products to consumers here at home, across the nation and even overseas.

If it’s food, this institute knows about it

Support and service to all food-related activities at Mississippi State University is the mission of the Food Science Institute. Founded in 1967 to help coordinate food research and training, the institute was reorganized in 2002 to provide a means for faculty and staff in food-related specializations to collaborate on research, education and outreach efforts.

Institute members include faculty and staff with specializations including food microbiology and safety, processing, human nutrition and a dozen other areas related to food production,



Russ Houston

Developing new packaging and processing techniques for Mississippi products is part of MSU’s food research. Food scientist Juan Silva and research assistant Jelena Stojanovic inspect jelly and other products made from Mississippi blueberries.



Support for Mississippi's seafood industry, above, and fruit and dairy products, below, are important parts of MAFES food research.



processing and marketing.

“By integrating these areas of expertise across the university, the institute enhances the ability of our professionals to serve students, industry and government agencies,” said institute director Robert Rogers. “The individuals involved represent extensive knowledge, training and experience.”

Lab helps make “sense” of new products

“Taste test” is a familiar term and most people associate it with free samples at the supermarket. “Sensory evaluation” is not so familiar, but it’s what goes on in a lab conducting food research at Mississippi State.

The James E. Garrison Sensory Evaluation laboratory was dedicated in April and allows MAFES and other MSU scientists to study consumer reaction to a food or other products using one or more of the five senses: taste, touch, smell, sight or hearing.

“The Garrison Sensory Evaluation Lab expands the scope of the work we’ve been doing in this area for more than a decade,” said Charles White, head of the Food Science and Technology Department.

The facility is available for use by MSU scientists and by the food industry in Mississippi and the surrounding region on a contract basis.

Project puts the squeeze on blueberries

Blueberries are great in muffins, pancakes, ice cream and a host of other products, but that’s not good enough one group of scientists.

A project by MAFES and U.S. Department of Agriculture/Agricultural Research Service researchers is turning processing/freezing-grade blueberries into value-added products.

“Specifically, we’re using blueberries for the production of juice, wine, vinegar and a dehydrated food product,” said MAFES horticulturist and Plant and Soil Sciences Department Head Frank Matta. “Also, we’re studying the influence of carbon dioxide and other gases on the shelf life of the berries and assessing the effects of sorting, washing and other processes on shelf life and quality.”

Other project participants include MAFES food scientist Juan Silva and USDA/ARS horticulturist Donna Marshall.

The results of their work can be applied to other crops, such as muscadines, and provide new marketing strategies that will increase product sales.

USDA/ARS horticulturist Donna Marshall inspects blueberries at the South Mississippi Branch.