

2002 OVERVIEW

NORTH MISSISSIPPI RESEARCH AND EXTENSION CENTER

Reuben Moore, Head

The North Mississippi Research and Extension Center (NMREC) faculty and staff experienced another outstanding year in 2002. We had an increase in research projects, publications, grants funded and extension programs conducted. Several new extension programs were established and numerous others were expanded and updated. The faculty and support staffs of NMREC have worked hard to provide quality research and extension programs for our clientele. This has been done in an environment of budget cuts causing significant purchasing restrictions.

The present physical properties of NMREC and their primary mission are as follows:

- Central Office, Verona, MS—Department Headquarters, District Extension Offices, Extension Specialist offices and MAFES faculty offices for Horticulture Unit and Northeast Mississippi Branch Experiment Station.
- Horticulture Research Unit, Verona, MS—Ornamental, Turf, Vegetable and Medicinal Herb Research.
- North Mississippi Branch Experiment Station, Holly Springs, MS—Canola, Cotton, Dairy, Wildlife, and Erosion Control Research.
- Northeast Mississippi Branch Experiment Station, Verona, MS—Soybeans, Cotton, Corn and Conservation Tillage Production Systems
- Pontotoc Ridge-Flatwoods Branch, Pontotoc, MS—Sweetpotatoes, Corn, Cotton, Fruits, Forestry and GPS Technology.
- Prairie Research Unit, Prairie, MS—Beef, Canola, Corn, Forages, and Soybean Research.
- Wiley L. Bean Swine Demonstration Unit, Pontotoc, MS

The following describes some of the activities of the above units along with staff and facility changes.

Central Office

Our extension and research faculty have worked together on numerous projects during 2002. Some of these included the Fall Garden Day, the Artificial Insemination Shortcourse at Prairie, our Producer Advisory Council,

and the Agronomic Row Crop Field Day. We have plans for more joint activities during 2003.

There were some faculty changes at our central office during 2002. Dr. Rob Carter, Extension Forestry Specialist, left our center for another position in Alabama. Mr. Ted Gordon joined our staff in 2002. He has responsibilities in Risk Management and Loss Control. Other responsibilities include Safety Officer and Hazardous Waste Management. The North Mississippi Extension Horticulture Center had its first full year of operation during 2002. We expect the services offered by the Center along with the number of people using its services to increase in 2003. The facilities of our old office complex are being used to house this Center. The mission and activities of this center are explained in the extension section of this annual report.

Horticulture Research Unit

Consumer demand for horticulture research and education activities grows larger each year. Ornamental plant evaluations continue to provide information on plants adapted to Mississippi landscapes. Our research with fresh cut flowers expanded significantly during 2002. Expansion of the trial will include economic analyses of commercial flower production.

Development of the Magnolia Botanical Gardens continues with more grants being obtained in 2002. We received a \$25,000 grant from the Carpenter Foundation and over \$1300 from other sources. We have secured funding for a Water Garden, which should be finished in 2003.

The medicinal herb project, which is a joint project with the National Center for Natural Products Research (NCNPR) at the University of Mississippi, has continued to maintain field plantings of mayapple for alternative crops research. These plantings are long-term experiments that are examining the possibility of growing mayapple as a specialty crop. We are also working with Eastern Red Cedar, which contains the same compound of interest as mayapple, podophyllotoxin. Other medicinal plants, with different compounds of interest, such as Passionflower, Black Cohosh, and Echinacea, are also being grown in controlled studies. The project has published several articles about specific aspects of mayapple propagation and podophyllotoxin content of Eastern Red Cedar.

North Mississippi Branch Experiment Station

The tunnel ventilation research facility is complete and fully operational. Several projects have been completed in the facility and several more are planned. Data from these projects have been reported at several conferences. Results of these trials are contained in this report. Inquiries have been received from several states requesting information about the research. This is the only known research facility of its kind and we are proud it is located at one of the units in this department. Agronomic and Field Crop Research at the NMBES. Research with cotton continues to provide information to producers in North Mississippi in variety selection, nutrient management, pest control, and cultural practices. This Station has a long history of cooperation with the USDA-ARS, National Sedimentation Laboratory in erosion research and water quality. Results of this research have lead to fewer tillage operations by producers, better yields, and less soil erosion in North Mississippi. New research initiatives have focused on broiler litter as a nutrient source in cotton production, evaluation of plants for efficacy in nutrient management, erosion control, and plants for better yield and higher quality forage.

Northeast Branch Experiment Station

An Agronomic Row Crop Field Day was held in August of 2002 with over 175 participants. Over 40 agronomic row crop research studies were conducted at Verona in 2002. These involved several scientists from other MSU departments. Areas of research in 2002 involved cotton nitrogen management, petiole nitrogen analysis, skip-row cotton, narrow row corn and evaluation of bio-engineered (Roundup resistant and corn borer resistant) corn hybrids. We land formed approximately 30 acres for improved surface drainage and plot data uniformity. We also conducted a cooperative remote sensing research project in Pontotoc County. New areas of research involved low soybean seeding rates and early soybean planting dates.

Pontotoc Ridge-Flatwoods Branch

The faculty at Pontotoc has continued with its expanded research efforts this year. This is due in part to some success in obtaining and retaining grant funding for some of the projects there. Several projects involving GPS, GIS, and remote sensing in sweet potato and traditional agronomic crops were conducted on station and at producer locations. Research efforts have also been focused on integrating agricultural biotechnology into no-tillage systems. Ongoing sweetpotato research includes variety development and improved production efficiency through optimum fertilization and pest control. Dr. Shankle at the Pontotoc Branch station has been very successful in working with other departments on campus such as Plant and Soil Sciences, Forestry, Entomology, Ag and Bio Engineering, and the Remote Sensing Technology Center. Collaborative research also involves other universities and companies focused on precision agricultural practices. The addition of Loyd Berry and Trevor Garrett in 2001 has contributed greatly to the

mission of our station there. A successful crop of Foundation Sweetpotatoes was recently harvested and will be sold to local producers for 2003 production.

Prairie Research Unit

With the closing of the Agronomy Program, upon the retirement of Dr. Roscoe Ivy, only limited forage research has continued. The primary emphasis has been placed on the evaluation of the "novel" endophyte fescues that have been released to southern producers. These novel fescues have been touted as providing the animal gains achieved from fungus free fescue but with the stand persistence of infected fescue without its well documented associated animal problems. The work with TASC0 continues, with emphasis not only on the reduction of body temperature, respiration rate and horn flies, but it is also being evaluated for its ability to raise the calf's antibody titer, due to nursing a higher quality colostrum at birth. Water quality projects are currently underway that are designed to better evaluate pastured beef cattle's contribution to the fecal coliforms found in streams and watersheds. Bermed pastures have also been constructed, that confine runoff water within a known land area, and this will better enable scientist to more precisely evaluate the influences of stocking rate density, age and class of livestock, feed and water placement, and time of year, among others, on the fecal coliforms present in runoff water. Projects are currently being conducted to determine if antibiotics, used in prescribed dosages, do indeed lead to an increased incidence of resistant E coli or Salmonella bacteria in farm animal populations.

Our department was again recognized by the MAFES "Outstanding Facility and Grounds Maintenance and Overall Image" committee. The Northeast Branch Station and Horticulture Unit won first in the competition and the North Mississippi Branch Station won the most improved award. It shows that our faculty and support staff are working hard to keep our facilities ready for clientele visits at all times.

The contents of the following document give only a brief overview of our 2002 activities. More detail can be found at our web site, which is msucare.com/nmrec/index.

It is our sincere desire to provide extraordinary service to our clientele. We value your comments and suggestions for our continued improvement. It is our goal to become the research and extension center recognized throughout the Southeast for its outstanding research and extension programs in all commodities where programs exist in this center. Please allow us to fill a need in your area of interest in 2003!