

NORTH MISSISSIPPI GARDEN EXPO

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ABSTRACT: Mississippi State University has an opportunity to reach a non-traditional agricultural audience, the home gardener. These new clients are the driving force behind the fastest growing segment of agriculture today: The Green Industry. They are involved in the entire range of gardening including ornamentals, vegetables, and turf. They are by far the largest client group that MSU agriculture could hope to reach. MSU-ES county agents report that the majority of the calls that they receive are related to garden and landscape questions. This event is an attempt to bring together the gardeners that have questions and interests with the MSU professionals that have comprehensive expertise in the many subjects that are related to gardening. Approximately 450 people attended the 2002 Expo.

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KEY WORDS: Gardening information, Mississippi gardens, MSU horticulture

MATERIALS AND METHODS: The North Mississippi Research & Extension Center hosts the North Mississippi Garden Expo as a way of achieving the goal of providing horticulture programs and information for northeastern Mississippi residents. The Garden Expo was patterned after the highly successful Fall Garden Day held at the Crystal Springs Truck Crop Branch Experiment Station. The Crystal Springs Garden Day attracts large crowds and has been a much anticipated annual event for central Mississippi gardeners for more than twenty years. Unfortunately, Crystal Springs, south of Jackson, is too far for most North Mississippi gardeners to travel for the event. The first Garden Expo event for gardeners in northern Mississippi was staged in Verona in 1997. The Expo has been undertaken in both the spring and in the fall to try to find the 'best' time to reach gardeners. It was determined in 2000 that the Garden Expo would be more effective for gardeners if the event were held in the autumn. In the fall, plants from the summer cultivar evaluations are still living in the beds, where in the spring, there would be little plant material in the field for gardeners to observe. There is generally an autumn flush of bloom in the Rose Garden which is a popular attraction for Expo attendees. Additionally, herb, vegetable, and ornamental beds have mature plants for viewing.

Mississippi Master Gardeners guided walking tours of research and demonstration gardens. Included in the walking tour were stops at the vegetable and herb beds and the Rose Garden, Native Plant Garden and the Annual Garden within the Magnolia Botanical Gardens. Members from the Northeast Mississippi Rose Society shared their interest and expertise in roses with gardeners. Four participants were transported to the Shade Garden, a project of the Monroe

County Master Gardeners, by hay wagons. The tour stopped at another highlight, the Hort Hot Line. The Hot Line is staffed by Master Gardeners to answer telephone inquiries on home gardening problems and questions. Mississippi Medallion plant trials in the beds near the Exhibit Tent attracted flower gardeners.

The Exhibit Tent housed MSU experts and specialists. The 'Plant Doctor' from the Department of Entomology and Plant Pathology diagnosed insect and disease problems and dispensed strategies to prevent future problems. Plant material specialists from the Department of Plant & Soil Science identified mystery plants brought by gardeners. The state turf specialist answered questions concerning homeowner turf problems. Pesticide usage and safety precautions were the topic for the representative from the Mississippi Department of Agriculture & Commerce Bureau of Plant Industry. The Butterfly Tent was an often visited attraction where people learned how to identify butterflies and how to plant their landscape to provide food and shelter for butterflies. The Mississippi Master Gardeners were represented with an information booth in the Exhibit Tent plus a large plant sale under a separate tent adjacent to the Exhibit Tent.

Featured speakers in the auditorium were Margaret Gratz, 'The Earth Lady' garden columnist with the Northeast Mississippi Daily Journal, who spoke on 'Discovering the Natural World in Your Backyard' and Eugene Randolph of the Memphis Bonsai whose seminar was 'Insight Into the Art of Bonsai'.

Hands on demonstrations were conducted under the pavilion in the Magnolia Botanical Gardens by Dr. Lelia Kelly on 'Crafting With Garden and Native Materials (or How To Make Pretty Things For Next To Nothing)' and Tim Needham's talk was on plant propagation.

Surveys taken at the Expo indicate that 93% of respondents would purchase garden supplies as a result of information obtained at the Expo: the Expo had an economic impact for the northeast Mississippi Green Industry. Ninety-three percent of the people who filled out a survey said that they planned to attend the 2003 Expo.

MAGNOLIA BOTANICAL GARDENS

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ABSTRACT: The objective of the Magnolia Botanical Gardens (MBG) is to establish an outdoor educational center integrating research, demonstration, and educational programs to promote landscape development and enhancement in communities in Mississippi. Home, street, and city landscaping projects result in not only an improved quality of life for citizens, but also economic benefits such as increased property values of individual houses and integrity of neighborhoods. MBG will serve as an outdoor classroom to evaluate and demonstrate environmentally friendly landscape practices and plant material selection for both the landscape professional and the homeowner. MBG will also serve as an outdoor classroom for children to develop an appreciation for and expertise in sustainable landscape practices. Affiliated horticulture groups such as the Mississippi Master Gardeners, Northeast Mississippi Rose Society, North Mississippi Native Plant Society, and the Old South Iris Society have indicated a willingness to contribute to horticultural demonstration and educational programs at MBG. The Gardens will be open to the public and should develop into an outdoor destination for both gardeners and non-gardeners alike. This will contribute to the diversity of cultural enrichment opportunities available to citizens in Northeast Mississippi.

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KEY WORDS: Magnolia Botanical Gardens, arboretum, public gardens, Mississippi gardens, environmental education

MATERIALS AND METHODS: The Horticulture Research & Education Unit (HREU) in Verona was formed in 1996 in direct response to requests from citizens of north Mississippi to MSU to establish a horticulture research and information center in the Tupelo area. The establishment of HREU signaled a shift in the MAFES philosophy from research exclusively for traditional agriculture, represented by row crop and livestock production, to include service for homeowner horticulture and commercial landscape projects. The Magnolia Botanical Gardens project was initiated in 1996 after the Ornamental Horticulture Producer Advisory Committee recommended that the most valuable thing that the HREU could do for their industry would be to construct a botanical garden on the grounds of the MAFES branch station in Verona.

Construction and development of the landscape planting areas and hardscape features are the initial stages of the Magnolia Botanical Gardens project that must be completed before research, educational, and demonstration activities and programs can be conducted at MBG. Construction and reconstruction, planting and replanting will be a constant activity at MBG, but until the

initial construction is completed, development of the educational components of the project is delayed.

Landscape plans that delineate construction details for the overall project are requisite for further construction. Landscape architects have contributed a master plan that outlines the overall design and format for the project. What is needed now are plans detailing the placement and installation of infrastructure items such as irrigation, retaining walls, walkways, water features, trellises, arbors, and other essential hardscape and garden components.

After plans are drawn, landscape contractors will be hired to execute the construction necessary for plant bed installation. Construction of the underground irrigation systems and drainage lines must be completed and then buried before plant bed construction can begin. In fact, the bulk of the construction work and expense has to be completed before the first plant is transplanted into the Garden. Walkways constructed of various materials must be constructed; some, but not all of the pathways must be handicapped accessible. Retaining walls, arbors, and trellises will be constructed of varying materials

HREU professionals will work closely with landscape architects and landscape contractors hired for the project and will be on the site daily to oversee the work. The Magnolia Botanical Garden Advisory Board will help to guide the development and operation of MBG. Labor and management for maintenance of existing and future plantings and hardscapes will be supplied by HREU personnel.

Landscape construction is weather dependent so two years will probably be required to complete establishment of the gardens. The Rose Garden in the Formal Garden, and the Annual Garden have been constructed and are being used for research, education, and demonstration activities. The areas of MBG that remain to be constructed include the Natural Garden, Water Garden, Wildlife Garden, Perennial Garden, Demonstration Garden, Shade Garden, and the Xeriscape Garden.

The Magnolia Botanical Gardens is an outdoor educational center that integrates research, demonstration projects, and education to promote the use of landscape plants for the enhancement of communities in Mississippi. Home, street, and city landscaping projects result in not only an improved quality of life for citizens, but also economic benefits such as increased property values of individual houses and integrity of neighborhoods.

Landscape plant material and cultural practice evaluations will be conducted by MAFES Mississippi Agricultural and Forestry Experiment Station research horticulturists stationed at the HREU in Verona. Included in the plant evaluations will be woody ornamentals, urban trees, under story street trees, and urban wildlife plants. Native plants and low maintenance plants that receive a minimum of pesticide protection and supplemental water will be evaluated for adaptability to Mississippi landscapes.

Educational programs will be conducted by the MSUES horticulture and forestry specialists that are stationed at the HREU in Verona. MBG will serve as an outdoor laboratory to evaluate and demonstrate energy and environmental friendly landscape practices and plant material selections

for both landscape and horticulture professionals and the homeowner. MBG will also serve as an outdoor classroom for children to develop an appreciation for and expertise in horticultural and environmental practices. Plans are currently under development to establish a Magnolia Botanical Gardens Information Center which will be staffed by Master Gardeners under the supervision of MSU-ES professionals.

The Gardens will be open to the public and should develop into an outdoor destination for both gardeners and non-gardeners alike.

The HREU research horticulturist will oversee the construction and maintenance of MBG. This individual has earned a PhD in horticulture and has 10 years of research and 20 years of horticulture production experience. Planting of the plant materials and turf areas as well as cultural practices including fertilization, irrigation, and pest control will be under the supervision of the research horticulturist. The staff for this aspect of the project will include a research assistant and a research technician from the HREU, plus a labor pool supplied by the Lee County Work Center. Master Gardeners from North Mississippi have committed to donate time and energy to help with planting and care of the various landscape plants. Additionally, the Northeast Mississippi Rose Society contributes time and money for the maintenance of the Rose Garden and the North Mississippi Native Plant Society has assumed the task of planting the Native Plant Garden. To date, contributions of plant materials from nurserymen and garden centers have supplied most of the plants growing in the MBG.

Education demonstration programs will be supervised by the MSU-ES consumer horticulture specialist stationed at the HREU. This individual has earned a PhD in horticulture and has over 20 years of horticulture production and educational experience. Master Gardeners will contribute time and expertise to the demonstration and educational programs. The horticulture specialist will supervise the educational activities of the Master Gardeners. Plans are currently developing for the formation of a horticulture information center at the HREU that will provide horticulture information and education programs to the gardening public. Education and demonstration programs will be conducted in the Gardens as appropriate for the program topic and availability of plant materials.

FOUNDATION SWEETPOTATO SEED PROGRAM

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ABSTRACT: A foundation sweetpotato seed stock program is maintained at the Pontotoc Ridge-Flatwoods Branch Experiment Station. The goal of the program is to maintain high quality seed stock which is genetically pure and disease, virus, and insect free for Mississippi's sweetpotato producers.

A total of 2,746 bushels sweetpotato seed was produced on 13 acres in 2001. All the seed was sold in the spring of 2002.

Three thousand plants, grown from meristem cuttings (2000 B-63 Beauregard, and 1000 B-14 Beauregard) were obtained from Louisiana State University in November 2001, and then transplanted in a foundation seed production certified greenhouse. The plants were transplanted into screened beds within a sealed greenhouse and cuttings were made to increase plant numbers throughout the spring of 2002. Cuttings were made to increase the population until July 2002. The first cuttings were planted in the field April 2002.

CITATION: L.W. Berry, M.W. Shankle, and J.L. Main. 2003. Foundation sweetpotato seed program. Annual Report 2002 of the North Mississippi Research & Extension Center. Mississippi Agriculture & Forestry Experiment Station Information Bulletin 398:34.

KEY WORDS: Sweetpotato, *Ipomoea batatas*, storage roots, foundation seed, sweetpotato breeding, vegetable crops, and horticultural crops.

FIGURES AND TABLES INDEX:

Table 1. Foundation sweetpotato seed stock production and sales 1994 – 2002

YEAR	PRODUCED (bushels)	SOLD
1994	3295	2792
1995	2505	2320
1996	3650	3075
1997	2490	1981
1998	4500	3300
1999	4200	3655
2000	1240	0780
2001	2800	2750
2002	2500	projected 2500

DETERMINATION OF BACTERIA AND NUTRIENTS IN RUNOFF FROM BEEF CATTLE GRAZING OPERATIONS: PRELIMINARY REPORT

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ABSTRACT: In the summer of 2002, six bermed paddocks, measuring 300 ft X 600 ft and comprising a total of 4.1 ac, were constructed in an established pasture of mixed common bermudagrass and fungus-infected fescue. A 75-acre pasture was surveyed to determine paddock parameters so that each paddock had approximately the same slope. This insured that runoff water collected from each paddock would travel through the collection paddock at similar rate. Berms are high and wide enough to insure that water in a specific paddock was contained and animal data collected was from animals confined in that specific paddock. The areas will be fenced and an automatic watering system installed. A runoff wier, for sample collection, was constructed at the lowest point of the paddock and an automatic sampling device installed in this weir to sequentially sample water from runoff events. Variables to be measured in water from these areas, but not limited to, are beef cattle stocking rate density (as related to the contribution a pastured animal makes to the bacterial content in runoff water); effect of age class or type of cattle; placement of feeding areas; temperature, rain frequency and other weather factors on the number and type of bacteria found in runoff water. Future studies may include nutrient content in runoff water from applied organic and inorganic fertilizers.

CITATION: Evans R.R., T.F. Best, S.V. Diehl, M.S. Cox, and L. Oldham. 2003. Determination of bacteria and nutrients in runoff from beef cattle grazing operations. Annual Report 2002 of the North Mississippi Research & Extension Center. Mississippi Agricultural and Forestry Experiment Station Information Bulletin 398:35-36.

KEYWORDS: Beef cattle; runoff water; fecal bacteria; nutrient runoff.

Extension Center. Mississippi Agriculture & Forestry Experiment Station Information Bulletin 398 pp__.

MATERIALS AND METHODS: In the summer of 2002, six bermed paddocks were constructed on Houston clay and West Point silty clay soil types. They were constructed in an established 75-ac pasture of mixed common bermudagrass and fungus-infected fescue. The bermed paddocks, measuring 300 ft X 600 ft and comprising a total of 4.1 ac, were surveyed to determine paddock parameters and the slope of each paddock. Berms were laid out in the pasture so that each berm had approximately the same slope. After the paddocks were laid out, the berms were put up with a levee plow, around the circumference of each paddock. The berms are approximately 18 inches high, approximately 18 inches wide across the top of the berm and 36 inches across the bottom. This insured that runoff water collected from each paddock was

water that had fallen in that specific paddock and data collected was from animals confined in that specific paddock. The areas were fenced and an automatic watering system installed. A runoff weir was constructed at the lowest point of the paddock and an automatic sampling device was installed in this weir, to sequentially sample water from runoff events. To insure accurate weather information, a computerized weather station was on site. Variables to be measured in runoff water from these areas, but not limited to, are beef cattle stocking rate density (to help ascertain the contribution a pastured animal makes to the bacterial content in runoff water); effect of age class or type of cattle; placement of feeding areas; temperature, rain frequency and other weather factors on the number and type of bacteria found in runoff water. Future studies may include nutrient content in runoff water from applied organic and inorganic fertilizers.

RESULTS AND DISCUSSION: Data collection will begin in 2003.