

SERA 14 2006 Annual Meeting

Participants at the 2006 SERA 14 Annual Meeting:

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Activity Leadership:

Dave Lockwood dlockwood@utk.edu and Bill Morris wcmorris@utk.edu, Co-Chairs;
Sara Spayd sara_spayd@ncsu.edu and Connie Fisk connie_fisk@ncsu.edu, Co-Chairs-elect;
Tony Johnston Secretary

Minutes of the Annual Meeting

The Southern Extension Research Activity 14 held its 2006 Annual Meeting September 25-27 in Knoxville, Tennessee. States with representatives attending were Missouri, Arkansas, Tennessee, Kentucky, Florida, Mississippi, and Alabama with a state report also submitted by Oklahoma.

The meeting was convened at the Knoxville Hilton hotel Monday evening, September 25 with a social reception and a get acquainted again session. At the business meeting the next morning, the group was welcomed by Tim Cross, Associate Dean of the Agricultural Extension Service and Mike Davidson, Interim Department Head, Department of Food Science and Technology, both of the University of Tennessee. In his introductory remarks, Justin Morris, Extension Administrative Advisor to the Group, offered greetings from Greg Weidemann, Administrative Advisor to the Group who sent his regrets that he was unable to attend, and encouraged the group to keep active and maintain their cooperative efforts, citing the importance of these Extension and research efforts to the Southern Region. Justin also asked for everyone to formally recognize the efforts of Bill Morris and Dave Lockwood in doing such a fine job planning and hosting the meeting. Attendees then began giving their state reports. Gill Giese delivered a PowerPoint presentation on Surry (North Carolina) Community College's enology and viticulture program.

At noon, we left for a tour of two commercial vineyards located in Jefferson County, Tennessee about one hour east of Knoxville, and one demonstration vineyard in the eastern part of Knox County. Bob Gaddis operates one of the oldest commercial vineyards in Tennessee. Production comes from American bunch and French-American hybrid cultivars. Some trials are being initiated using *V. vinifera* cultivars. While most of the production goes to local wineries, some seedless cultivars are being grown and marketed either direct to the consumer or via local farmers' markets. Hammer Vineyards also grows mostly American and French-American hybrids for wine. They do have perhaps the oldest Chardonnay planting in commercial production in Tennessee. The demonstration plot is owned and operated by Rob Pearce. He has twenty-five varieties, most of them being *V. vinifera* cultivars, on four different trellising systems. We tasted ten different wines from this vineyard.

We reconvened on Wednesday, September 27 and completed the presentation of the state reports. It was evident to all that the wine and grape industry in the Southern Region continues to grow. Each state is experiencing an increase in the acreage of grapes planted and an increase in wineries being built or planned. It was noted that some personnel from the Mid-America Viticulture and Enology Center have moved to the University of Missouri - Columbia and its newly-formed Institute for Continental Climate Viticulture and Enology, largely supported by the Missouri Grape and Wine Board. The Institute will initially "focus on research and Extension efforts for grape and wine producers in Missouri and surrounding areas."

Sara Spayd and Connie Fisk, both from North Carolina State University, will serve as the new Co-Chairs of the Group. The 2007 annual meeting will be held in North Carolina with details forthcoming.

The minutes of the Business Meeting and the state summary reports are being posted on our website <http://sera-ieg-14.tamu.edu/>

Accomplishments and Impacts:

Collaborative research and Extension activities among participants

New variety releases and production systems; product development and product quality evaluation

Research and Extension publications and other education and technical information materials

There are 324 wineries in the region that produce in excess of 4,500,000 gallons of wine annually. A conservative estimate of the yearly gross retail value of these wines exceeds one quarter of a billion dollars. Grape and wine production is an important alternative agricultural enterprise.

Residents of several Southern states have a strong tradition of making a living from a well-tended, sustainable, small farm. In many states, tobacco has historically been the main crop. In many cases, this acreage is now being planted in grapes. SERA 14 participants help to sustain this agrarian tradition, with its strong work ethic and excellent agricultural land and climate, to enhance the potential for the continued economic well-being of these small farmers.

All of our activities are consistent with, and speak to fulfillment of, our five stated Objectives with the outputs among those listed for each of those objectives. The SERA 14 website <http://sera-ieg-14.tamu.edu/> provides participants the ability to share information and more importantly provides a mechanism to widely disseminate research results and information to all stakeholders. Efforts to increase the visibility of the Group's activities will allow recognition of the value of those activities to our stakeholders.

SERA 14 researchers participated in the finalization of national research priorities by the National Grape and Wine Initiative.

Surry Community College established a viticulture and enology program in 1999 to serve the state's wine and grape industry and enhance economic opportunity for North Carolinians. Students from throughout North Carolina and surrounding states benefit from "hands-on" training, study and industry "networking" opportunities. Graduates and entrepreneurs go on to own, operate and work in the state's new vineyards, wineries and related businesses; such as retail, consulting, vineyard maintenance and industry supply services. Surry County is home to one of the largest plantings of vinifera (traditional European winegrapes) on the east coast, located within the recently designated Yadkin Valley AVA (American Viticultural Area). Access to local operations is fundamental to internships and part-time employment for students. "Hands-on" learning by doing and problem solving is emphasized. A successful internship program allows students to apply their new knowledge and skills assisting vineyard and winery owners. Several applied "best practice" studies and applied viticulture research projects have been initiated. The school's facilities include a 4.5 acre vineyard, a bonded winery (2,500 gallon capacity), crush pad, bottling line, laboratory/classroom and barrel room for aging wine. A viticulture field lab/shop building was completed in 2004.

Over 500 students have been served since the program's inception and 40 students are currently enrolled. Students participate in curriculum and continuing education classes, field trips to wineries and vineyards, and/or seminars presented by recognized industry professionals. Three classes are available via the internet (Introduction to Viticulture, Vineyard Establishment and Development, and Grape Pests Diseases and Disorders). Recently, the North Carolina Legislature appropriated funding to provide for initial planning for a state viticulture and enology center to serve the state's wine and grape industry to be located on the Surry Community College campus.

Pruning, shoot thinning, and fruit thinning are three labor intensive operations that can be mechanized within the Morris-Oldridge Vineyard Mechanization System (M-O System). OXBO International Corp. has commercially implemented the M-O System through machinery marketed under the trade name vMech™. In June 2006 University of Arkansas researchers traveled to the French Camp Vineyards near Paso Robles, California where research studies continue to be conducted to validate the effectiveness of the M-O System. Data from these studies have been used to develop budgets to estimate the economic impacts of mechanizing these operations. Budgets were developed for three trellising systems used by French Camp Vineyards and common to other commercial vineyards in the region. These are the vertical shoot positioned (VSP), modified 2 ft. lyre, and 3 ft. quadrilateral (quad) trellising systems. The manager of the cooperating vineyard has five years experience with the equipment and provided field speeds, material usage, and other information necessary to compute the costs of machine farming.

The increase in interest in grape production that exists in almost every state in the Region has led to an increase in the number of programs to assist growers. State advisement programs common throughout the Region include workshops, field days, conferences, production short courses, newsletters, electronic advisories, site visits.

A three-year cooperative project of Missouri and Arkansas concerned with vineyard best management practices continues. Plots were set out in three “lighthouse” vineyards in each state to demonstrate the effects of specific practices, and data is collected from each. Monthly tailgate meetings are held at these lighthouse vineyards throughout the season. These meetings emphasize the management practices occurring at that time, especially pest management practices. This tailgate BMP program has been very well received by growers.

Muscadines, already an important regional grape, has enormous potential to play an even more important role in the grape and wine activities of the Region. Extensive and intensive research and Extension materials concentrating on muscadines are provided throughout the Region. These educational efforts are being assisted by a growing number of agencies in the various states providing financial assistance to their nascent muscadine industries. Additional SERA 14 website links to existing and developing Muscadine resources have been posted. An example is the *2005 Southeast Regional Muscadine Grape Integrated Management Guide*, from North Carolina State University, a comprehensive document for cultural practices, disease, insect and weed control, to be updated annually.

Researchers at the University of Florida have identified a novel peptide with antimicrobial activity that is very effective in preventing colonization and growth of *X. fastidiosa*. The *X. fastidiosa* bacterium causes Pierce's Disease and is spread by specific insect vectors. The bacterium lives exclusively in the water vessels of a wide variety of plants, but the strain that lives in grapevines clogs these vessels, causing leaf loss and eventual death of the vine. Susceptible (*Vitis vinifera*) varieties of grape that express the gene for the novel peptide are resistant to Pierce's Disease, even after multiple exposures to the bacteria. This technology will enable the development of grape varieties resistant to Pierce's Disease and will allow for the advancement of the wine industry in the disease-susceptible areas of the southeast United States and in California where the insect vector has established a presence in grape growing regions.

Impacts:

Pierce's Disease is threatening the profitability of California's grape and wine industries and limits the expansion of this industry in the southeastern United States. Currently, losses from PD exceed 100 million dollars. Florida researchers have developed and tested a novel and very effective antimicrobial peptide that can be engineered into grapevines to provide resistance against PD. The University of Florida is actively seeking companies interested in commercializing this novel breakthrough

The number of active wineries has increased from 277 to 324 in less than two years. A valuable contributor to this growth has been the research and Extension expertise and the efforts of Region scientists. The participants provide invaluable assistance to the wineries and the growers of the Region in improving the efficiency and quality of production, the

quality of products and the development of new value-added products.

Cost savings with vineyard mechanization are economically significant and range from roughly \$260/acre (VSP) to nearly \$600/acre (quad) while maintaining – or improving – fruit quality. Differences largely reflect differences in vine spacing. Piece rates for pruning operations range from 42 to 60% of the costs of traditional farming methods. The largest cost savings are realized from shoot thinning and fruit thinning operations; hand labor costs are only 8 to 15% of traditional methods.

While dollar cost savings are large, vineyard mechanization provides other advantages. First, mechanization helps to stabilize grape yield through the concept of “balanced cropping”. The final adjustment on crop size can be made late in the growing season affording an opportunity to compensate for crop losses due to frost injury, poor growing conditions, or poor fruit set. Second, by eliminating reliance on hand labor, the vineyard is able to retain fewer, but better trained, workers.

Enormous interest in new opportunities for muscadine value-added products continues to lead to new cultivation of muscadines, supported in many of the Southern states with various kinds of state financial support. Work has begun to develop grower cooperative associations to support the production and marketing of muscadines and derivative products. The creation of a stable, long-term market in the U.S. and abroad will have a substantial economic impact for small Southern growers.

Publications:

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