

**National Agricultural Research, Extension,
Education and Economics (NAREEE) Advisory Board**

Annual Report and Recommendations of the Specialty Crop Committee

US Specialty Crops: An Update on Opportunities and Challenges

April 30, 2007

The National Agricultural Research, Extension, Education and Economics Advisory Board (NAREEE) Specialty Crop Committee was assigned the task of studying the scope and effectiveness of the research, extension, and economics programs affecting the U.S. specialty crop industry. The implicit objective is to determine how effective the research, extension, and economics programs affecting the U.S. specialty crop industry are at assisting it in achieving long-run sustainability.

The Specialty Crop Committee met on August 24, 2006, obtaining input from the United States Department of Agriculture (USDA) agency representatives and specialty crop industry participants who responded to the Federal Register notice and written invitation from the NAREEE Advisory Board office sent to a variety of stakeholders to provide input. In particular, the Committee sought reactions to and suggestions for additions to or modifications of the recommendations contained in its initial April 30, 2006 report. The results of that input and Committee discussion are presented here. These recommendations are to be viewed as supplementing those contained in the Committee's April 30, 2006 report.

KEY RECOMMENDATIONS

- **The Specialty Crop Committee recommends that the Agricultural Research Service (ARS), Cooperative State Research, Education and Extension Service (CSREES), Economic Research Service (ERS) and National Agricultural Statistics Service (NASS) collaborate to host a series of workshops for scientists in the agencies, universities and industry to identify specific issues and topics that they view as highest priority.** These workshops should be held not less frequently than every two years to identify emerging priorities. For example, such workshops would provide an ideal opportunity for the agencies to refine plans for using funds included in the 2008 USDA Farm Bill proposal related to specialty crop research, extension, education and economics work.
- **The Committee recommends that USDA pursue both near-term and longer-term strategies and processes to improve its data regarding the number of farm workers needed versus how many are available.** There is concern that if readily accessible labor disappears, significant amounts of specialty crop production may move out of the United States. The Department should examine the short term impact of loss of labor to provide real time information on

- emerging labor shortages in specialty crop agriculture. This information would be helpful in the immigration reform debate ongoing in Congress.
- **The specialty crop industry is particularly in need of research to help identify sources of pathogens in U.S. and foreign produce. Invasive arthropods are of equal concern.** Many invasives impacting natural resources and agriculture have been insects and mites. For instance, just in the last nine years the Asian Longhorn Beetle, Emerald Ash Borer, various and continuing whiteflies, aphids, mealy bugs, mites, and scales, affecting ornamentals, turf grass, tree fruits, vegetables and cut flowers, have caused huge financial losses and devastated urban and rural landscapes.
 - **The committee urges that USDA examine the potential for better coordination across USDA agencies including research, regulatory and marketing programs, other governmental agencies, land grant universities and the private sector.** Research results may often be useful for regulatory agencies and those charged with supporting industry activities in other ways, such as through marketing programs, export programs and food programs of the USDA. Collaboration among these groups will be of increasing importance with the continued urbanization of the U.S. and competition for resources between agricultural and urban uses. Additionally there needs to be adequate funding to support these collaborations.
 - **The committee recommends that USDA develop a summary of what it has accomplished over the past five years on specialty crops; progress in current research, extension, education and economics work; and the agencies future plans.** This should include establishing a database that can be used to track funding, number of projects, their outcomes and other appropriate measures to allow assessing progress made in coming years in dealing with specialty crop industry issues. These efforts can form the basis for ongoing agency-industry dialogue. Also the specialty crop industry desires more opportunity to meet with USDA agencies regarding priority topics and resources to fund them.

ADDITIONAL RECOMMENDATIONS

1. Measures to Improve Efficiency, Productivity and Profitability

- The specialty crop industry has generally encouraged research to focus on broad families versus single crops to obtain greater impact from available funding. ARS is working with the tree fruit, grape and wine, berry and similar initiatives in this arena. However, crop-specific analysis is important for providing nutrition information, organic production practices for improving quality of particular items, increasing labor productivity and improving food safety. Many pests plaguing the specialty crop industry are regional and need attention, even though most major ARS research stations with a focus on specialty crops are located in Florida and the western United States.

- Joint approaches are needed on an area-wide basis to deal with issues that are much broader than individual states. These should be part of ongoing research, particularly related to plant protection and quarantine and integrated pest management that go beyond chemical controls to include bio-controls.
- An integrated crop management approach, in which environmental factors, community impacts and economic sustainability are considered in the process, is increasingly necessary.
- Additional data on ecological functions and environmental conditions are needed to help the industry qualify for and sustain participation in USDA conservation programs, and to help the Natural Resources Conservation Service (NRCS) in reporting to the Government Accountability Office(GAO) and Congress. Specialty crops tend to be impacted by incident reports and models used by regulators. These crops also have an especially difficult challenge in sustaining key crop management tools like pesticides without ecological and environmental impact assessments that can provide on-site data.

2. Measures to Increase Competitiveness in Research, Extension and Economics Programs

- The nursery industry, which accounts for only 0.6% of the ARS research budget produces 11% of agriculture's production value. ARS, the land grant universities and industry have created a collaborative research initiative which they hope will be a model for the future. However, earmarked funds are used to date to fund it and the program has not been incorporated by ARS into its baseline budget. We encourage that it be built into the ARS budget to provide ongoing stability for the program.
- There is an urgent need for better communication among research, extension and education agencies and how they interact with each other and with other non-REE agencies, as well as how they collaborate with specialty crop industries in setting a research agenda. This is especially true for crops with small total production and small-scale producers who don't have national lobbying capacity.
- Industry organizations should invite more USDA personnel to their research meetings as a way to improve communication. The Specialty Crop Committee could coordinate the various reports available to bring together the positions of the specialty crop industry as a whole.
- The NAREEE Advisory Board Specialty Crop Committee should interact with the Specialty Crop Research Committee reporting to the Agricultural Marketing Service, USDA. This could help improve how the industry and the USDA look ahead at potential practices likely to emerge within the industry and their implications.

3(A). Enhance Quality and Shelf-life, Taste and Appearance

- There is need for continued research, extension and economics work to better understand quality as related to nutrition contributions of specialty crops and to transmit that information to consumers.
- New tools are needed to measure quality of specialty crops, as well as new research on automation and mechanization throughout the industry. The need to improve product quality and productivity of labor to maintain competitiveness in the long run are becoming more evident.

3(B). New Crop Protection Tools and Integrated Pest Management

- There is need to devote more effort to sustainability and environmental issues. The specialty crop industry faces increasing issues in air and water quality. For example, in California pesticides are now being regulated as an air pollutant because some of them produce volatile organic compounds. Technologies to apply inputs such as pesticides, fertilizers, etc. more precisely or with less impact on the environment would be very useful. USDA should greatly enhance its efforts to develop pest management systems that reduce ecological and long-term environmental consequences which lead to periodic pesticide crises from banning widely used products.

3(C). Prevent Introduction of Foreign and Invasive Pest and Diseases

- Invasive species are of critical concern to agriculture in general and to the specialty crop industry in particular. The ARS strategy of developing germplasm that can be used to diagnose emerging diseases shows promise. Continued and additional funding should be allocated as resources permit, recognizing the high potential economic benefit to the specialty crop industry as well as agriculture more broadly.
- Key segments of the specialty crop industry have unified in calling for the development and permanent funding of a Clean Plant Network, a program that would involve collaboration across CSREES, ARS, and APHIS. Building on existing and successful but limited programs and infrastructure such as the Foundation Plant Services at University of California at Davis and the National Resource Support Project 5 (NRSP5) program at Prosser, WA the program would seek to provide elite, pathogen-tested clonal material of high-value and at-risk genera including *Prunus* (peaches, nectarines, cherries, almonds, plums) and *Vitis* (grapes). This would be to facilitate the safe import and export, pathogen testing and control, and release of new germplasm that is essential to the continued competitiveness of the U.S. nursery, fruit and wine industries. The Clean Plant Network offers a critically important opportunity for cross-agency collaboration, and CSREES, ARS and APHIS should work closely with external stakeholders to advance the concept and identify funding opportunities.

- There is concern that the specialty crop industry can be adversely impacted by APHIS guidelines which trigger closing borders if there are disease outbreaks. However, there are not guidelines for reopening the borders. It is important to better understand the implications of this dichotomy in practice around sanitary and phytosanitary (SPS) issues and market access issues as being critical to the future competitiveness of US specialty crops industry. We encourage USDA to look at the economic implications of this issue and how well the scientific results available are used in the decision processes.

3(D). Develop New Products and New Uses

- Increased energy cost is an item high on the list of the specialty crop industry concerns, including impacts on production, processing and marketing practices, transportation and energy conservation. The industry is also interested in the potential for using specialty crop resources to provide alternative energy sources.

3(F). Enhance Food Safety

- Proper handling of food prior to serving is an important area of concern for specialty crops research, extension outreach, and education of youth. Proper handling is to be encouraged on the part of USDA and its agencies, as well as universities and extension systems with which it works.
- The industry needs help to identify the most serious food safety issues and to prepare a plan for either avoidance or lessening the impact. This implies a need for sociological/behavioral economics research on what drives decisions regarding food characteristics, including food safety.

3(G). Improve Mechanization of Production

- CSREES and ARS should continue to collaborate with other agencies within USDA and other federal agencies such as NASA to develop a broad-based workshop on automation, mechanization and remote sensing in specialty crop production.
- Mechanization to increase productivity throughout the specialty crop production and marketing system is important. For example, given adaptations of tomato plants to accommodate tomato harvesters, hand picking has become much more efficient when it isn't possible to mechanically harvest wet fields.

3(H). Enhanced Irrigation Techniques

- Improving irrigation management requires continuing research and extension work.

- Water use efficiency is critical to the long term viability of the specialty crop industry. Better understanding of plant water needs will be important in future policy decision making.

Specialty Crop Committee

Dr. Walter Armbruster, NAREEE Advisory Board Member; President, Farm Foundation, *Chairman*

Dr. Jeffrey Armstrong, NAREEE Advisory Board Member; Dean, College of Agriculture & Natural Resources – Michigan State University

Mr. Daniel Botts, Director, Environmental & Pest Management Division – Florida Fruit and Vegetable Association

Dr. Nancy Creamer, Director, Center for Environmental Farming Systems – North Carolina State University

Mr. James Lugg, NAREEE Advisory Board Member; President – TransFRESH Corporation

Mr. Matt McInerney; Executive Vice President – Western Growers Association

Dr. Philip Nelson, Scholle Chair Professor, Department of Food Sciences – Purdue University (until March 9, 2007)

Mr. Craig Regelbrugge, Senior Director – American Nursery and Landscape Association

Dr. Mary K. Wagner, NAREEE Advisory Board Member; Chief Technology Officer – E&J Gallo Winery (Since March 9, 2007)

Dr. George Hoffman, Liaison and Vice Chair – NAREEE Advisory Board; President and CEO – Restaurant Services, Inc.