SPECIALTY CROPS RESEARCH TEAM POSITION PAPER 6-9-2006

Fresh and processed products derived from Specialty Crops[1] make vital contributions to human health and well-being, and collectively constitute the economic backbone of many rural economies across the U.S.

Domestic market value of these Specialty Crops surpasses $45 billion annually[2], and now accounts for over half of total national crop production value. In addition, exports of specialty crops and their products are increasing, with global per-capita production and consumption rapidly expanding. The tremendous, positive contribution of Specialty Crops and their products to human health and well-being has been dramatically underscored by the U.S. Department of Agriculture's (USDA) recent revision of the food pyramid – three of the five recommended food groups include Specialty Crops.

However, specialty crop producers and processors face serious challenges that threaten the viability of specialty crop producers and industries. These threats include:

- Increasing competition from lower cost foreign producers
- Declining availability of labor, land, water and energy resources
- Persistent and serious pressure from insect and plant diseases
- Increasing costs and greater management complexity from state and federal regulations
- Greater demand for improved microbiological food safety

While the challenges facing specialty crop producers have increased, research and extension capacity to address specialty crop producer and processor problems throughout the U.S. has decreased dramatically. The combination of increasing threats to specialty crop industries and fewer resources to address serious problems threatens the stability and economic viability of individual producers, rural economies and national food security.

In response to these threats specialty crop industries have developed several industry-specific initiatives to define the strategic means to mitigate the impact of these growing threats. These national initiatives, supported by Congress and coordinated by an industry-USDA partnership, have identified critical research and extension priorities. Recently, these specialty crop industries have initiated a process to identify common research and extension priorities among the crop-specific initiatives to focus scarce research and extension resources more effectively. This unified approach among specialty crop industries will provide input and guidance to federal agencies about problems that are common to specialty crop industries, so federal resources can be organized in a more efficient manner to address common problem areas and provide problem solving solutions to the greatest possible spectrum of specialty crop industries. This approach should enable specialty crop industries to produce and process their crops

more efficiently and sustainably, and provide consumers with a safe, secure, and affordable food supply.

To this end, a broad and growing coalition of crop organizations (listed in the appendices) have aligned through the formation of the Specialty Crop Research Team (SCRT), to promote unity and clarity around technical needs, and to foster a multi-disciplinary and multi–institutional approach to addressing industry research and extension priorities at a national level.

SCRT has created a unifying list of national research and extension needs that outline common strategic priorities in four key areas of research, extension and education:

- Understanding and Improving Quality
- Understanding Consumer Perceptions of Specialty Crops, the Role of Nutrition in Specialty Crops, and the Economic Contribution of Specialty Crops to Rural Economies
- Enhancing Processing and Production Efficiency
- Developing and Promoting Sustainable Practices

Extension and Outreach is an Overarching Need

Research directed at each of the four critical need areas identified above will contribute significantly to the growth and success of the U.S. specialty crop sector in both the domestic and global marketplaces. However, those research results must be delivered to, and implemented by, producers and processors via world-class extension and outreach. Unfortunately, the specialty crop industry nationwide, is historically underserved by university-based cooperative extension, and continues to see this capacity eroded. Unprecedented private-public partnerships have maintained basic outreach and extension here and there, but these piecemeal measures are inadequate. As demonstrated by Figure 1, specialty crop industries are expanding their influence on the U.S. economy. A growing U.S. specialty crop industry must secure and strengthen extension and outreach throughout the country's production regions.

The SCRT unifying national research, extension and outreach list outlines common strategic priorities in four technology areas of research, extension and industry outreach.

I. Understanding and improving quality

Goals

- Provide innovative tools and technologies to support rapid, precise, and affordable evaluation of crops, products, and processing practices
- Provide improved means for quality evaluation for breeding and plant physiology
- Develop sustainable crop production through introduction and application of new plant materials more suited to regional environmental constraints and local pest and pathogen pressures

Key components to understanding and achieving improved quality

Accurate and precise product and process specifications

- Support the development and refinement of technology platforms for measuring/assessing quality-related attributes
- Provide researchers and industry end-users with innovative analytical tools and technologies, including those that enable quality evaluation of existing and new breeding materials and permit optimization of cultivation and downstream production processes

Applied genomics, genetics and breeding

- Provide growers with a broad range of disease-free varieties, rootstocks and clonal materials which have been evaluated for regional suitability and quality attributes
- Improve overall quality, health and viability of Specialty Crops and associated rural communities through improved health, consistency, performance, and access to a wider selection of characterized plant material for commercial plantings and product development

• II. Understanding Consumer Perceptions of Specialty Crops, the Role of Nutrition in Specialty Crops, and the Economic Contribution of Specialty Crops to Rural Economies

Goals

- Understand consumer perception of Specialty Crops
- Understand the role of Specialty Crops in improving human nutrition and health
- Characterize and communicate the economic and societal contribution of specialty crop industries to rural communities

Key components for addressing consumer perceptions, the role of nutrition in specialty crops, and the economic contribution of specialty crops to rural communities.

Consumer perceptions

- Characterize consumer perceptions of Specialty Crops

Enhancing the economic contribution of specialty crop production to rural communities

- Quantify economic and social benefits of specialty crop industries to local communities
- Evaluate public sector investment in specialty crop-related research, extension, and outreach as it is linked to local economics

Understanding nutritional components

- Enhance public health through better understanding of the nutritional and health benefits derived from Specialty Crops

III. Enhancing Processing and Production efficiency

Goals

- Enhance crop management, efficiency, and sustainability
- Improve the viability of production and processing operations
- Improve worker safety and productivity

Key components for increasing production and processing efficiencies

Automation and mechanization of production, handling, and processing

- Create the necessary extension and outreach capacity to implement current best practices and develop innovative strategies to control and optimize specialty crop production, handling, and processing
- Optimize production, processing, and handling via automation and application of new equipment, sensors, instrumentation and procedures.
- Develop production systems that complement automated and mechanized cultivation, handling, and processing

Enhance knowledge of pest-plant interactions and develop systems to optimize management

- Develop practices and solutions to mitigate the adverse impact of pests on the national specialty crop industry and associated communities
- Develop systems to reduce the impact of invasive pests

Worker safety and productivity

- Improve the environment for worker safety and increased productivity

IV. Developing and Promoting Sustainable Practices

Goals

- Make the specialty crop industry a better neighbor by conserving scarce resources and foster enhanced environmental stewardship

Key components for improving sustainable practices

Integrated crop management

- Improve management of energy and resource inputs and outputs

- Understand and improve the nutrient/mineral cycle, soil health, and quality of the crop production environment

Water, air, and land stewardship

- Understand and enhance the agro-ecosystem and the interaction of the industry with the local area to contribute to improved quality of life in rural communities

[1] The term "specialty crops" derives its definition from the *Specialty Crop Competitiveness Act of 2004* (P.L.108-465) which states specialty crops means fruits and vegetables, tree nuts, dried fruits, and nursery crops (including floriculture).

[2] USDA-NASS, 2002. *http://www.nass.usda.gov/census/census02/volume1/us/st99_1_002_002.pdf*

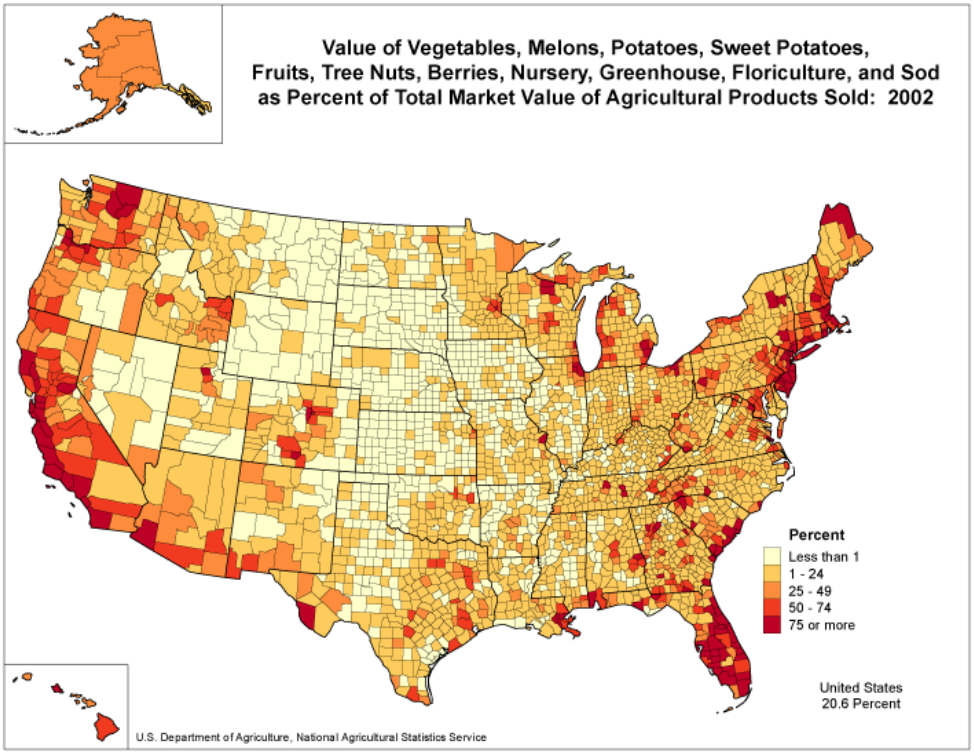

Figure 1. Specialty crop production as a percentage of total agricultural