

Pest and Plant Biology Issues in the Nursery and Floriculture Industries

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Nursery and floricultural crops is the third largest value farm crop in the United States just behind corn and soybeans and ahead of wheat, cotton and tobacco – a \$15 billion segment of the U.S. agricultural economy at wholesale. Of the estimated \$50 billion in U.S. specialty crop horticulture sales in 2005, greenhouse and nursery crops contributed a third, or \$16 billion, slightly less than vegetables. Ornamental crop receipts place nursery and greenhouse as the #1 agriculture industry in key states – Oregon, in the top 3 in CA, FL, TX, and in the top 5 in MD, MI, PA, Ohio, New York, and North Carolina. Given the value of the nursery and floricultural crops historically a disproportionately small part of the total USDA's research budget has gone to address the needs of the nursery and greenhouse industry.

One of the major research areas of emphasis for the ornamentals crop industry that relate to plant and pest biology include invasive plant, disease and insect species. As a result of the explosion in the globalization of trade, the domestic nursery and floriculture industry faces increased economic and regulatory pressure from the introduction of non native pests. The recent introductions of non native insect and disease pests such as Emerald Ash Borer, Asian Longhorned Beetle, *Phytophthora ramorum* (Sudden Oak Death) and *Ralstonia solanacearum* race 3 biovar 2 have had devastating impacts in terms of loss of markets, major ecological damage and regulatory quarantines on the industry. Emerging insect pests such as Chili Thrips and Ambrosia Beetles are also posing a challenge. In addition, the concern regarding the ecological invasiveness of a limited number of currently sold ornamental plants in specific geographic areas of the U.S. has become a major issue.

To counter the currently present and possible future introductions of new non native species, research is needed to focus on systems approaches, clean stock and integrated Best Management Practices to reduce their introduction and mitigate the established pest populations. In addition, continued research efforts with the emphasis on new and enhanced pest control materials with a minimum of environmental and applicator impacts are critical to help support the sustainability of the industry.

Another major research area for the ornamentals industry is in plant biology and physiological processes. Specific emphasis includes research to support irrigation systems management to reduce water use in production and in the landscape. In addition, determination of proper plant nutrition and fertility requirements for maximum production while minimizing nutrient run off is of interest. Enhanced breeding techniques for the development of ornamental plant material resistant or tolerant of abiotic stresses found in urban landscapes and disturbed soils is becoming more critical.

Programmatic Recommendations for USDA – CSREES Programs

- Emphasis on program deliverables – what will be the economic impact/outcome of the research?
- Integration of research/Extension efforts from research
- Focus on consortium approaches of multi land-grant universities around specific problem areas to encourage collaborative rather than competitive research efforts
- Continue industry input into the CSREES decision making process regarding program priorities, funding decisions and program evaluations
- Closer interaction and understanding of CSREES National Program Leaders regarding nursery and floriculture industry concerns and issues
- Emphasis on industry partnership with CSREES grant opportunities
- Development of specific competitive grant opportunities directed at identified industry needs
- Better dissemination of research results to industry