

**Green Industry Research Needs
Center for Applied Nursery Research
2010-11 Grant Period**

This list is to inform you of the areas of research needs and their priority as suggested by the green industry. Research needs were suggested by a panel of nursery growers and professionals, and were ranked by participants as high (*****), medium (***) and low (*).

Plant Specific Problems

- ***** Sterility/Invasive Potential - making invasive plants sterile and case studies on the invasive potential of economically important species (e.g. Nandina studies performed by Dr. Knox at UF)
- ***** Development of a protocol for assessing drought tolerance of ornamental plant material in production and in landscape situations.
- ***** Evaluation and development of invasive plant alternatives; including native plant material
- ***** Evaluation and development of plant material genetically tolerant of abiotic and biotic stress (e.g. conifers)
- ***** Evaluation and screening of ornamental species and cultivars within species for insect and disease resistance/tolerance (e.g. hydrangea, rose, blueberry, etc. cultivar screening for disease tolerance).
- **** Evaluation of edible landscape plants (ex: blueberries) in nursery production and for landscape value/use.
- ** Evaluation of cold-hardy tropicals.

Pest Management

- ***** Phytophthora, Pythium, Rhizoctonia, and Thielaviopsis management – best management practices; fungicide resistance
- ***** General pest control on edible landscape plants in production environments.
- ***** Fire and Argentine ants – insecticide longevity (shipping problem - need slow release product); rate of incorporation; control in fruit bearing crops, control in propagation
- ***** Pre & Post-emergent weed control in propagation and liner production
- ***** Wood boring insects (Asian Ambrosia Beetle, Emerald Ash Borer, Wood Wasp, etc.) – systemic control, application technology, and penetrants
- **** Degree-day and plant-pest schedules/models - link info to GA weather sites; pest calendars
- **** Downy mildew and Powdery mildew resistance management (fungicide resistance)**** Virus control and management in production to ensure clean stock
- **** Best management practices for scale, thrip and mite control including novel application technology
- **** Longevity and efficacy of pre-emergent herbicides.
- **** Understanding relationship between pesticide storage conditions and pesticide efficacy
- **** Identification and control of new foliar disorder of *Itea virginica* in Northern FL and central/southern GA
- **** Control of bacterial pathogens using new products and/or cultural practices
- *** Japanese Beetle control in production
- ** BMPs for pest management and/or condensed pest-specific BMPs

Crop Production

- ***** Water conservation and management in production and the relationship between irrigation and leaching of nutrients and pesticides.

- ***** Reducing root stress - insulation, container wraps & colors, water management, pot types for survival and growth
- ***** Nursery production using very low fertilizer rates or cultural practices to reduce nursery effluents with an emphasis on phosphorous and nitrogen effluent.
- ***** Measuring water consumption (as opposed to use) in nursery production.
- ***** Reducing nursery waste generation – recycling, alternative fuels, composting used potting soil and plant material
- ***** Weed control in beds, roadways, pond waterlines, and drainage ditches in nurseries
- ***** Micronutrient product evaluation for longevity in production cycles– heavy metals for plant growth (e.g. Ni and Cu Oxides)

Economics & Marketing

- ***** Determining the overall (production, service, and retail) economic impact of the Green Industry in Georgia.
- ***** Investigating the nursery industry’s role in production and use of alternative energies and fuels.
- ***** Maximizing shipping efficiency
- ** Cost comparison of chemical applications (e.g. PGRs) to labor.
- * Investigating the safety and economic value of landscaped areas along major highways.
- * Develop cell phone applications (“apps”) on fertilization rates, spray calibrations, etc.