

GROWERTALKS

Features

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Funding Research That Helps You Succeed

Julie Martens Forney

When mass merchandisers decided they wanted a piece of the flower-selling pie (back in the 1990s), they triggered seismic shifts in the floral marketplace. That choice unleashed ripples of contraction across the U.S.-based flower industry, with many growers, florists and other industry businesses closing their doors.

What you may not know is that U.S. floriculture research mirrors that market shift, according to Jim Daly, American Floral Endowment Chairman and Vice President of Floralife/Smithers-Oasis.

“There is a direct correlation between growers shrinking in numbers and the number of universities actually doing floriculture research,” he said. “As grower numbers declined, so did university floriculture research. Corporate research actually has grown as a result, but will never be enough in order to compensate for the fact that university research has gone down.”

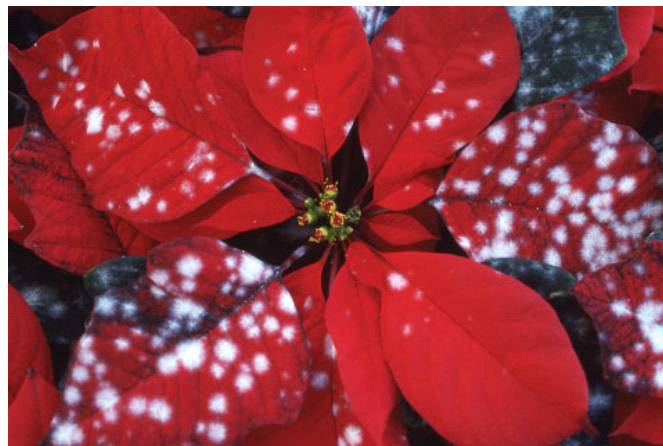
Pictured: White powdery mildew colonies ruin a poinsettia's bright red bracts, making it unmarketable.

That's where AFE comes in. With a focus on funding university research that delivers ready-to-use solutions for common industry problems, AFE is every grower's friend. The work that AFE funds leads to improved productivity, more efficient pest control and practical flower marking information. In short, industry donations yield direct value to the industry.

Leroy De Vries, Production Manager at Henry Mast Greenhouses in Byron Center, Michigan, agreed.

“AFE takes industry money and applies it directly to production-based research that tends to have immediate results on greenhouse operations,” he said. These results can be everything from research on light and how it affects plant growth or disease development to internships and scholarships, which help address the labor shortage by investing in talented young professionals.

AFE isn't a membership organization—it's an industry effort. Funded by industry contributions, AFE reliably and freely shares research information. (Just visit Endowment.org to read the latest research on things like thrips control and powdery mildew prevention.) Current research focuses on issues confronting the industry, including water



conservation, developing downy mildew-resistant impatiens and using supplemental light to reduce energy costs in crop production.

How does AFE benefit me?

Supporting the floral industry is what AFE is all about. Chances are that you're growing crops using methods and techniques developed through AFE-funded research. Leroy relies on AFE-funded research to grow crops with fewer chemicals.

"Any research that reduces chemical use is a benefit for us, the retailer and the consumer," he said. The research he's referring to? DIF and graphical tracking.

Now the standard method for growing poinsettias, Easter lilies and bedding plants, DIF came about in part through AFE-funded research conducted at Michigan State University over 35 years ago. Researchers determined that a combination of warm nights and cool days could limit plant height and reduce the need for growth regulators.

Roger McGaughey, Senior Head Grower at Pioneer Gardens in Deerfield, Massachusetts, has 46 years of growing experience. He actually worked with the MSU researchers as they were hammering out DIF and graphical tracking.

"The basic concept—the difference between day and night temperatures and how plants react to that—has got to be paramount in any grower's toolbox," Roger said. "The technique has application to other crops, too, like the perennials I work with now."

Leroy uses DIF on spring annuals to deliver a crop "that's ready to grow for the consumer"—a secret weapon for generating repeat sales.

Powdery mildew and poinsettias

Controlling powdery mildew on poinsettias is another result of AFE-funded research. In 1988, poinsettia growers were shocked by the appearance of snowy white powdery mildew on leaves and bracts.

"This was a disease they had never dreamed of seeing on poinsettias," explained Margery Daughtrey, Senior Extension Associate at Cornell's Long Island Horticultural Research & Extension Center. "Typically striking just before shipment, the disease was insidious and destroyed the crop's value."

Working with Mary Hausbeck, Extension Specialist and Associate Chair for Administration at Michigan State, "we learned the biology of powdery mildew on poinsettia, including how it responded to temperatures below 86F, which is why it appeared at the end of the crop," Margery said.

Through a combination of diligent research and education efforts, including talks at the SAF Pest Management Conference and the (then) Ohio Short Course, "we were able to successfully squelch the problem within just a few years," Margery explained. "The disease hasn't been eradicated, but it's carefully managed today." This AFE-funded research provided specific grower guidelines that continue to help manage this disease.

Water molds and recirculating irrigation

Other plant diseases explored thanks to AFE-funded research include root rots caused by water molds: Pythium and Phytophthora, which also causes crown and leaf blights. These diseases grew in importance as growers started recycling irrigation water and nutrient solutions to benefit both the environment and their bottom line. Those practices also helped spread water-borne diseases. Mary and her team have explored novel methods to remove these water molds from irrigation water. Their recommendations include sanitation.

"Conditions that favor good plant growth and minimize stress make the plant less vulnerable to attack by a water mold," Mary said. "Increasing copper ion concentrations in nutrient solutions may also limit root rot."

Some growers control undesirable algal growth and limit water molds using sand filtration, chlorination and algaecide treatments.

“Using fungicides or biocontrol products preventatively can help beat the disease on crops that water molds favor.” Mary also recommends scouting to detect problems early in a crop.

Growing a new industry segment

AFE is all about helping the industry thrive, so it’s no surprise to learn that it funded research that’s helped the U.S. cut flower industry grow.

“Essentially the specialty cut flower industry is now the U.S. cut flower industry,” said Dr. John Dole, Associate Dean & Director, Academic Programs, North Carolina State University. “In our AFE project, we systematically evaluated the postharvest life of many of the new cut flower species and made handling recommendations.”

This research helped bring dozens of crops to market, including some of the newer, trendy flowers like rudbeckia, non-cold-requiring stocks, lupine and dahlias.

“AFE-funded research changed the way that we handle Icelandic poppies here on Peregrine Farm,” said Alex and Betsy Hitt, owners and specialty cut growers for 30 years. “For many years, we seared the cut stems in boiling water after harvest. That’s not an easy job, so I was delighted when John Dole and the group at NCSU produced postharvest work that showed no benefit to the stem searing. This information saves us time, and more importantly, we don’t disfigure the stem ends now.”



What’s next for AFE research?

Imagine growing flowers with customized fragrance by changing the color of light they receive. That’s ongoing research now at the University of Florida by Dr. Thomas

Colquhoun.

“We’re interested in enhancing or tailoring flower fragrance for a better grower and consumer experience,” he said.

Pest management research is focused on blending traditional pesticides with biological control practices, plant nutrition and technology. Drone-monitored crops will lead to targeted crop nutrition, disease management and pest control.

The industry is adopting new storage and shipping techniques, including sea shipping and cross-country transport. The goal is longer-term shipping using foolproof techniques to reduce shrink and increase profits. Research will help define and refine those techniques.

Automation tackles the labor shortage, with robots sticking cuttings and grading plants before packing. Driverless carts and tractors could be the next advance in the robotic arena. Or maybe it will be robotic sprayers that apply pesticides with precision and efficiency.

For growers like Betsy, research is the key to success.

“Research has made our business. Market forces are always pushing growers to offer better quality and more competitively priced flowers. That’s not going to change,” she explained. “Growers will always be looking for new crops and technology changes almost daily. Left to our own devices, we growers experiment all the time, but I’m not sure how many of us get reproducible results. Research like the type supported by AFE helps growers stay competitive and succeed.”

Researchers at universities are eager to tackle industry issues. AFE welcomes feedback and suggestions from the

industry to help identify key research needs. Also consider a tax-deductible contribution to the American Floral Endowment. It's an investment with a terrific return. **GT**

Julie Martens Forney is a freelance writer with more than 25 years of experience writing about floriculture industry issues and gardening for consumers. To read her current bylines, check out SAF's Floral Management, [HGTV.com](#) and [DIYNetwork.com](#). Julie's also an avid gardener, tending edibles and perennials in a wildlife-friendly garden that features year-round color.