



Marketing Sustainability

SUSTAINABILITY BECAME A HOT TOPIC A FEW YEARS AGO. HOW WAS IT PERCEIVED THEN AND HOW DOES IT AFFECT GREENHOUSE PRODUCTION AND CONSUMER BEHAVIOR TODAY?

By Roberto G. Lopez and Jennifer H. Dennis

It's difficult to believe that the trade press began covering floriculture sustainability over five years ago. Since then, many of you have probably incorporated an aspect of sustainable production or marketing in your greenhouse without even realizing it. In 2008, it was not very clear where the industry stood on adopting sustainable practices, so we began investigating grower perceptions of sustainability, certification and consumer willingness to pay for sustainably produced plants. In the beginning, we were two of the few academic researchers to examine this topic.

Today, as part of the USDA S-1051 Multi-State project, several colleagues around the country work on this issue with us, including Ben Campbell at the Vineland Research Center (moving to the University of Connecticut), Bridget Behe at Michigan State University, Charles Hall at Texas A&M University, Hyak Khachatryan at the University of Florida, and Chengyan Yue at the University of Minnesota. This article will highlight some of the recent marketing and sustainability research conducted at Purdue and with our colleagues at other universities.

Factors Affecting Willingness to Adopt Sustainable Floriculture Practices

We started out our quest to understand grower perceptions and challenges producers faced when deciding to adopt sustainable practices. In 2008, Purdue University conducted a



Figure 1. Trays of sustainably produced vinca (left) and conventionally produced vinca (right) were delivered to five garden centers across Indiana.



Figure 2. Sustainably and conventionally produced bedding plants were the same price at this garden center.



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nationwide survey of greenhouse growers to determine the factors affecting growers' willingness to adopt sustainable practices. Several factors were considered and included growers' perception of state environmental regulations, general attitudes towards sustainability, age of the grower, operation size, and perceived customer value of sustainable products. Of those that responded, almost all (96 percent) had heard of the term sustainability and more than half (63 percent) had some variation of sustainable practices in their operations. Additionally, over half of growers surveyed (65 percent) thought sustainability was important to the environment and the right thing to do.

Our research showed that although attitudes were positive, attitudes alone were unable to predict adoption behaviors. Growers' concerns about implementing new practices and perceived production risks were the two biggest factors affecting adoption. Results from this study provided original insight into growers' perceptions of sustainability. Growers felt sustainability was important, but indicated that they needed educational resources to help address their perceptions. In response to this, Purdue University researchers helped to form the Floriculture Sustainability Research Coalition (FSRC)

Barriers to Adoption of Sustainable Floriculture Certification Programs

As U.S. growers began implementing sustainable practices, the industry began to learn about the Veriflora and MPS certification programs. Therefore we examined

the level of knowledge growers had about those programs and what their interest was in becoming certified. In 2008, the majority (62 percent) of respondents were not interested in becoming certified. Sixty percent of respondents had heard of Veriflora and 22 percent had heard of MPS; however, 38 percent had not heard of either program. Respondents also stated they had very little to no knowledge about either U.S. sustainable floriculture certification program. In 2012, over 50 growers have been certified nationally by MPS and Veriflora. Growers indicated their lack of interest in certification stemmed from the perceived risk of going through the certification process with little information about how it could help their business financially. The study also revealed growers took into consideration whether consumers were willing to pay more for products that were certified sustainable.

Consumer Preference for Sustainably Produced Flowering Plants

Based on results from the previous studies, in 2009 we examined whether consumers were willing to pay a premium for sustainably produced plant material. For this study, we delivered sustainably and conventionally produced geranium, marigold, vinca, petunia and New Guinea impatiens to five retail garden centers and greenhouses throughout Indiana (Figure 1). At each location the conventional and sustainable plants were displayed adjacently with signage placed near the sustainable plants (Figures 2 and 3). Prices were the same for



all plants except in three locations where sustainable plants were priced 20 percent higher (Figure 3). The average price of the sustainably produced New Guinea impatiens and geranium 4-inch pots ranged from \$4.79 to \$7.19, and conventional petunias, marigolds, and vinca ranged from \$3.59 to \$5.15. We determined that 71 percent of the higher-priced sustainably grown plants sold at retail while 78 percent of the conventionally grown plants sold at the 20 percent lower price. Approximately 80 percent of respondents, which were garden center consumers, had not heard of the term sustainability. A small percentage (10 percent) thought it meant “chemical free”, “earth friendly”, and “harmless to the environment”. Fifty percent of the plants sold were influenced by the point of purchase display while 23 percent of plants purchased that day were based on “what they were coming for that day”.

In 2009, Purdue researchers teamed up with several colleagues from Michigan State University, Texas A & M University, Vineland Research Institute and University of Minnesota to expand on research dedicated to sustainability. Three consumer studies were conducted focusing on biodegradable pots, gardening consumer segments based on eco-practices, and investigating consumer preference for organic, local or sustainable plants. One follow-up grower benchmark study was also conducted.

Appeal of Biodegradable Packaging

This time the collaboration focused on the characteristics of biodegradable pots, which was one of many forms of providing a sustainable option to the end consumer. This study identified consumer segments based on 535 observations from Indiana, Michigan, Minnesota and Texas. Results showed consumers considered rice hull pots the most likeable followed by straw pots based on appearance. Several market segments were also identified and segmented based on demographics; opinions, attitudes and interests, and usage behavior.

The seven consumer profiles included: “Rice Hull Likers”

(younger, higher income, fewer adults in the household, less interest in sustainable plants), “Straw Likers” (metro consumers and consumers with few African-American and Latino shoppers),

“Price Conscious” (consumers who spend more on outdoor lawn/garden products), “Environmentally Conscious” (consumers who are more likely to recycle household waste), “Carbon Sensitive”



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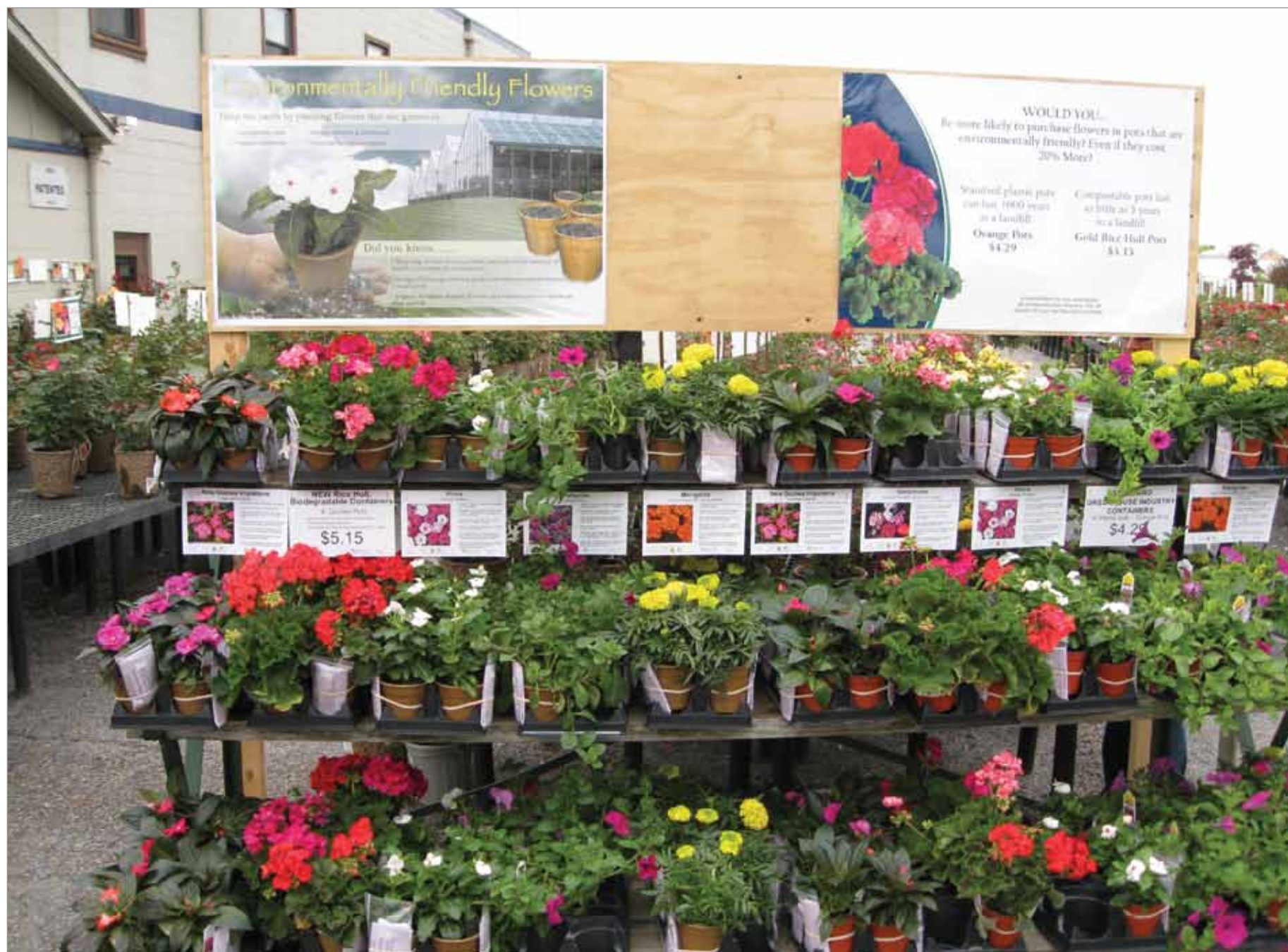


Figure 3. Sustainably produced bedding plants were priced 20 percent higher at this garden center.

(consumers who are interested in waste composition products), and “Non-discriminating” (consumers with no distinguishable preferences). This research showed that consumer segments indeed existed for sustainable products.

Gardening Consumer Segments Vary in EcoPractices

This multi-state project focused on identifying consumer segments based on eco-friendly attitudes and behaviors. The goal was to educate the industry about those consumers who were interested in sustainability based on their everyday behaviors such as recycling newspapers. The premise was to answer whether gardening consumers exhibited environmentally friendly behavior and therefore, would be more receptive to product innovations specifically designed to be eco-friendly. We collected plant

purchases, recycling attitudes and behaviors, and preferences for eco-friendly containers from 763 consumers in Indiana, Michigan, Minnesota and Texas. Three consumer groups emerged: low-use, woody and herbaceous plant buyers. The consumer group with the most eco-friendly behaviors was the herbaceous plant buyers. Across all categories, they had the highest percentages for eco-friendly behaviors such as recycling aluminum cans, newspapers, magazines, plastic pots and plant tags, composting food and yard waste, and taking reusable bags to the store. Herbaceous plant buyers had a higher percentage across all eco-friendly behaviors for recycling aluminum cans (26 percent), newspapers (19 percent), and plant pots (12 percent). This study showed that segmenting consumers by plant purchases could be a viable marketing strategy in terms of targeting sustainable behaviors.

Consumer Preference for Organic, Local or Sustainable Plants

Following with our collaborative approach to addressing consumer research on sustainable behaviors, our multistate group conducted another study using 834 participants from Indiana, Michigan, Minnesota and Texas to investigate consumer preferences for ornamentals, vegetable transplants and herbs grown: 1) organically, locally or sustainably; 2) in energy-efficient greenhouses; or 3) in biodegradable, compostable or recyclable containers. These variables were among several initially tested among growers in the 2008 Purdue survey on sustainable practices.

Results showed consumers were most interested in plants that were produced locally, similar to the



public's ever increasing interest in local food products. Consumers were also interested in purchasing plants in containers that are more sustainable. Biodegradable and compostable pots were more desirable than recycled pots.

Sustainable Practices Adopted by Greenhouse and Nursery Growers

Given recent consumer and market interest in more sustainable products and business practices, we updated our survey in 2010 to: 1) establish a benchmark for sustainable practices; 2) include nurseries; and 3) to increase our sample size since the first survey, although sent nationally, was not representative of the U.S. floriculture and nursery industry. Our research team conducted a nationwide survey of greenhouse and nursery growers to determine the current state of sustainability in the industry.


Growers were asked about the importance of sustainability, their views of state environmental regulations, sustainable practices in place and ones

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they would like to implement in the next one to three years, and interest in sustainable certification. None of the grower respondents in this survey were certified sustainable, but at least one fourth (26 percent) were interested in certification. More than half of the respondents were recycling plastic pots, using controlled-release fertilizers, and composting plant waste. A small percentage of growers (12 percent) wanted to use biodegradable plant containers within the next few years, although the consumer research above indicated there was

a segment that expected it. The obstacle for implementing sustainable practices had changed since our initial survey to incompatibility with existing systems of production.

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