

CONSUMER ACCEPTANCE OF AN ORGANICALLY-GROWN ORNAMENTAL

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Abstract. Organically grown greenhouse herbs have been successfully produced and marketed. We believe this success indicates a potential market for organically grown ornamentals to environmentalist consumers and for use in landscapes requiring plants grown with minimal synthetic inputs. Organically grown crops have a higher perceived value by consumers and also are often more costly to produce than conventional crops. Currently organic herbs and nursery crops compose only 90 acres in Florida out of the estimated 14,500 acres in the US organic crop. Methods for organic container plant production were studied by comparing conventional and alternative production components such as substrates, organic fertilizers, and alternatives to chemical weed control. *Lantana* 'New Gold' and *Buddleia* 'Royal Red' were successfully grown using these organic production methods. Based on plant salability, *Lantana* 'New Gold' was used in a consumer acceptance and pricing study at a retail garden center. Conventional and organically grown lantanas were marketed side by side in the garden center at different prices. Garden center staff recorded the number of each group purchased each day for a two-week period. Based on sales records, consumers chose conventionally grown lantanas in preference to the higher priced organically grown lantanas.

The United State Department of Agriculture, National Organic Program under the leadership of the Agricultural Marketing Service, defines organic production as "a production system that is managed in accordance with the Act (Or-

ganic Food Production Act of 1990) and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity." It is a management system that excludes the use of conventional agricultural chemical inputs and favors management practice standards that encourage and maintains soil fertility, crop nutrient, seeds and planting stock, crop rotation, and non-synthetic pest, weed, and disease management. Organic commodity recognition for product labeling requires government-approval by a certifying agency that inspects the production environment to ensure that the farming practices and inputs meet the rules established by USDA organic standards (USDA-Agric. Mkt. Ser., 2002). For the purpose of this paper, the term "organically-grown" makes reference to the production of an ornamental, *Lantana* 'New Gold', using organic methods for a consumer choice evaluation. These methods encompass the standards set by the National Organic Program definition of "organic production" but lack the governmental approval by a qualifying certification agency for the purpose of organic label standards.

Organic production can be perceived by consumers as environmentally friendly and in contrast to the environmental pollution mentality that is associated with conventional farming practices. Organic production and handling of food products have begun to demand a greater share of the marketplace (Gibson, 1994). While the organic production of food, animal meats, fruits, and vegetables, has been the primary focus of organic production, specialty crops such as herbs and cut flowers are carving their own niche in the marketplace. While not currently a consumer choice, organically grown ornamental plants for the retail and consumer markets can be an alternative for the more environmentally conscious consumers. Before organically produced plants can be marketed, organic substrate media amendments, pest, weed, and disease management studies are needed to evaluate the effectiveness of these production methods. The use of organic media amendments and fertilizers for container plant production has been investigated for greenhouse production of geraniums (Duke et al., 2003a, b) including other ornamental crops grown for the landscape alternatives. The ability to grow ornamental crops organically for specialty markets has the potential of creating a new consumer choice niche for the industry. Application of organic ornamentals would include bird and butterfly gardens located at a daycare facility, school gardens, or in horticulture therapeutical environments.

Organically produced foods usually demand a higher price premium compared to conventionally produced food. In a recent survey to assess the consumer buying preference for IPM and organically grown produce, consumers were asked if they would be willing to pay more for produce grown with little to no pesticides if it has no blemishes or some slight cosmetic blemishes. The study showed that consumers were willing to pay more for IPM/organic produce at a price premium of 5-15% over the normal cost and less than five percent said that they would be willing to pay more than 25% (Zehnder et al., 2003). Consumers have a low tolerance for blemishes on their foods and the same can be said about or-

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amental crops. The aesthetic appearance of the product is what sells.

Materials and Methods

Lantana 'New Gold' cuttings were propagated in a greenhouse using a 50:50 peat:perlite propagation medium and placed under mist irrigation on 29 May for 4 weeks. Rooted plants were potted in one gallon containers on 26 June in the following four substrate/fertilizer blends: *Conventional* = Conventional substrate and controlled release fertilizer [100% Standard Mix (60: 30: 10, pine bark: sphagnum peat: sand, by volume) from Graco Fertilizer, Cairo, Ga.; conventionally used by container nurseries plus Osmocote 15-9-12 (3-4 months release) at the standard recommended rate of 8 pounds per cubic yard]. *Organic 1* = 100% Standard Mix plus Fertrell Nitrell 5-3-4 organic fertilizer at a rate providing the amount of N comparable to Osmocote. *Organic 2* = 70% Standard Mix and 30% Mushroom Compost (by volume; from Quincy Farms, Quincy, Fla.) plus Fertrell Nitrell 5-3-4 organic fertilizer at a rate providing the amount of N comparable to Osmocote. *Organic 3* = 90% Standard Mix and 10% Worm Compost (by volume; from Smith's Worm Farm, Boston, Ga.) plus Fertrell Nitrell 5-3-4 organic fertilizer at a rate providing the amount of N comparable to Osmocote.

Container plant production materials and labor cost data were collected on a per plant basis. Plants were grown in full sun, watered using overhead irrigation and harvested after 8 weeks. All treatment produced saleable plants. The following treatments were used for the consumers' choice evaluation: *conventional*, *organic 2*, and *organic 3*. Fifteen of each plant treatments were transported to a local retail garden center, Native Nurseries of Tallahassee, Inc., 1661 Centerville Rd., Tallahassee FL 32308, for sale a week later. Native Nurseries is a retail nursery specializing in native plants, plantings for wildlife, organic gardening supplies, and herbs. A small display was set up at the retail nursery and garden center person-

nel monitored sales. Plants were priced at \$3.99 for the conventional and \$4.50 & \$4.99 for the organic and labeled accordingly.

Results and Discussion

Table 1 lists the total production cost, materials and labor, per plant for *Lantana* 'New Gold' by substrate media treatments. Table 1 does not include plant propagation cost; however, these can be found commercially around \$0.40-0.42 per plant, organic nature unknown. The table shows that production cost for a 1 gallon *Lantana* was \$1.85 when grown conventionally, compared to \$2.06, \$2.07, and \$2.10 using organic methods and reflects an 11.3, 11.4, and 13.5% increase in production cost respectively. Since the cost of production for *organic 1* and *3* was similar, *organic 1* was dropped from the consumer choice evaluation. Also, since the production cost percentages were relatively less than 14%, *Lantanas* were priced at a premium to determine the consumer's perception of the organic product.

Figure 1 illustrates the cumulative numbers sold of conventional and organically grown *lantanas* at Native Nurseries in Tallahassee, Fla. Garden center personnel recorded the numbers of plants sold by substrate fertilizer treatments for two weeks, 6-20 Sept. 2003. On the first day on sale, 9 *conventional* (\$3.99), 2 *organic 2* (\$4.50) and 1 *organic 3* were sold. On the second day, just 1 *organic 2* sold. By the third day, all *conventional* *lantanas* were sold-out. Sales of the remaining organic treatments were less brisk and at the end of the 2-week evaluation, a total of 11 *organic 2* and 9 *organic 3* were bought.

The results of this study show that price does matter and that consumers, even at a garden center that promotes environmental harmony, are economically conscious customers. It is expected that with continued production and sales of organically produced fruits, vegetables, herbs and cut flowers increase in demand that ornamental plant consumers would become more accepting of organic ornamentals.

Table 1. Total production cost, materials and labor, per plant for *Lantana* 'New Gold' by substrate media treatments.

Production inputs	Production cost (\$)			
	Conventional [†]	Organic 1 [‡]	Organic 2 [*]	Organic 3 [¶]
Material				
Liner, pot, and substrate	0.29	0.29	0.27	0.28
Fertilizer	0.04	0.22	0.22	0.22
Weed control	0.16	0.16	0.16	0.16
Other pest management	0.70	0.70	0.70	0.70
Total material costs	1.19	1.37	1.35	1.36
Labor				
Substrate mixing, potting, & spacing	0.39	0.39	0.45	0.41
Second fertilizer application	0.00	0.03	0.03	0.03
Weed control	0.09	0.09	0.09	0.09
Other pest management	0.18	0.18	0.18	0.18
Total labor costs	0.66	0.69	0.75	0.71
Total production costs per plant	1.85	2.06	2.10	2.07

[†]100% Standard Mix (60:30:10, pine bark:sphagnum peat:sand, by volume) Osmocote 15-9-12 at the standard recommended rate of 8 pounds per cubic yard.

[‡]100% Standard Mix plus Fertrell Nitrell 5-3-4 organic fertilizer at a rate providing the amount of N comparable to Osmocote.

^{*}70% Standard Mix per 30% Mushroom Compost plus Fertrell Nitrell 5-3-4 organic fertilizer at a rate providing the amount of N comparable to Osmocote.

[¶]90% Standard Mix per 10% Worm Compost plus Fertrell Nitrell 5-3-4 organic fertilizer at a rate providing the amount of N comparable to Osmocote.

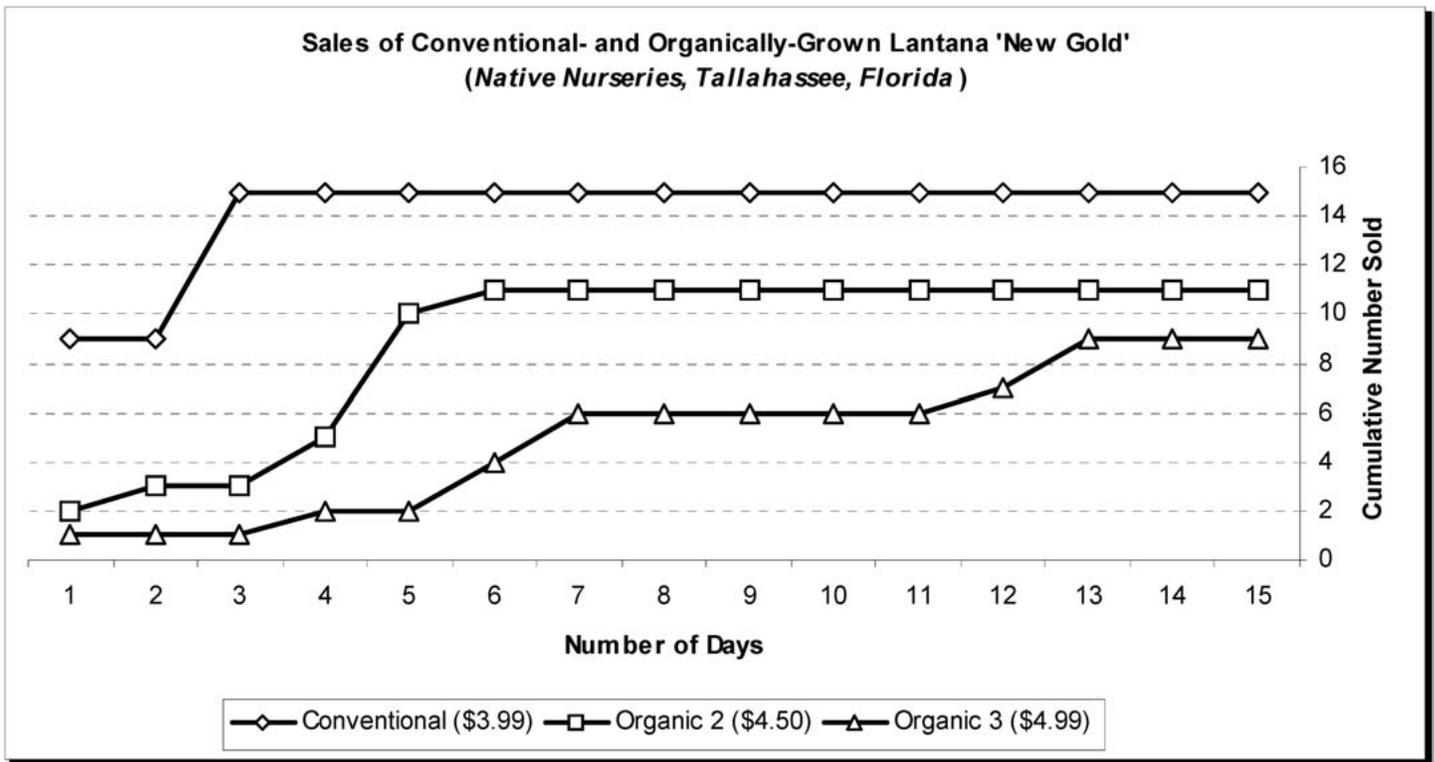


Fig. 1. Consumer choice evaluation of an organically produced ornamental, Lantana ‘New Gold’, at an environmentally conscious garden center demonstrated that customers prefer lower pricing than environmental value.

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