

Educational and Marketing Programs Serving the Landscape Industry

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Summary. A survey of landscape installers was conducted to help determine how university personnel and industry groups could better meet the needs of the landscape industry. The top four opportunities by which university personnel could assist landscape installers were to: 1) provide a hot-line for immediate professional advice (21%); 2) provide more in-house training (21%); 3) facilitate testing and introduction of new products (16%); and 4) provide lists of available publications and research findings (14%). Landscape installers also identified the most valuable information sources regarding types of plants available and plant installation. The implications of the survey results for developing education and marketing plans to serve the landscape installation industry are discussed.

Previous work demonstrated that the landscape installation industry is an expanding segment of the landscape/nursery industry (Florkowski et al., 1994; Hubbard et al., 1989), with substantial business-to-business marketing (sales among growers, between growers and wholesalers and between growers and landscapers) as well as retail merchandising (Boone and Kurtz, 1986; Garber and Bondari, 1992a). Continued growth of the landscape installation industry and improved service to the landscape consumer could be enhanced by industry cooperation (Garber and Bondari, 1992d). Information that pinpoints the needs of landscape installers and defines the problems experienced with their customers would provide a basis for developing educational support programs and marketing plans for this group (Boone and Kurtz, 1986).

Recent market research addressed the role of landscape architects in creating demand for plant material and the information sources used by landscape architects (Garber and Bondari, 1992 a-c). The research also identified ways that landscape installers (Garber and Bondari, 1992d) and growers (Garber and Bondari, 1992e) could help landscape architects with selecting plants and developing site plans. These earlier findings provided stimulus for the formation of a new alliance including growers, landscapers, and landscape

architects in Georgia to foster closer and more-effective working relations in the green industry.

The ballooning increase in size and visibility of the U.S. landscape industry has expanded the university programs that support it. These university research and extension programs need to encompass critical functions of the landscape industry and address priority needs if they are to receive continued public and private support. The landscape industry is relatively young, so the critical needs for success have not been well-documented. Defining the specific needs of the landscape industry and developing programs to meet these needs can increase industry support for university outreach programs and ensure that implemented results are of high economic value. This study elicits the landscape installer's view of how university personnel can improve their industry and how other industry groups, such as landscape architects, can positively affect landscape installers. With this information, innovative university programs can be developed that help landscape architects and growers assist landscape installers.

The objective of this study was to identify 1) information sources used by landscape installers in their decisionmaking and 2) opportunities for landscape architects and university personnel to assist the landscape installation industry more effectively. University programs are identified that could address the landscape installation industry needs, benefit multiple segments of the green industry, and provide a high rate of return on the university investment.

Materials and methods

Survey questionnaires were mailed to 189 member firms of the landscape division of the Georgia Green Industry Assn. and the Metropolitan Atlanta Landscape and Turf Assn. The initial mailing was sent in Nov. 1993, with follow-up mailings to non-respondents in Dec. 1993, and Jan. 1994.

Eighty responses were received (42.3% response rate) and analyzed. The landscape installation industry was segmented by size so that support programs could be developed for the varied needs of varied-sized firms. Firms were grouped according to 1993 wholesale value of plant material purchased: small (<\$50,000), medium (\$50,000-\$200,000), large (>\$200,000). Data were tabulated and analyzed using the generalized linear model procedure of SAS 1989 to perform the one-way analysis of variance and mean comparisons. The frequency distribution of respondents were tabulated for each question using the PROC FREQ of SAS. The open-end questions were coded, tabulated, and analyzed as described by Garber and Bondari (1992b).

The survey addressed the following areas: a) the importance of several sources of information used to purchase plants, b) the types of publications used as a source of information on plant installation, c) how Univ. of Georgia personnel and landscape architects could improve the landscape installation industry, and d) the most common complaints landscape installers received from their customers regarding installed plant material.

Results and discussion

The importance of sources of information used by landscape installers to determine which plants to purchase, as measured by "very important" ratings (Table 1), were a)

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consultation with local grower (35%), b) nursery catalogs (23%), c) producer trade shows (20%), d) other landscape contractors (18%), e) plants observed at botanical and public gardens (18%), f) university sponsored seminars (17%), g) trade journal articles (12%), h) recommendations of landscape architects (6%), i) plant locators (6%), and j) extension service publications (5%). As evidenced by the top three rated choices, nurserymen are the source of choice when landscape installers decide which plants to purchase. The low rating given to extension service publications could reflect the limited availability of publications or may indicate that landscape installers are not aware of such publications on plant selection. University sponsored seminars were rated higher than extension service publications as a source of information on which plants to purchase.

The most frequently listed books or publications used by landscape installers regarding plant installation were *Manual of Woody Landscape Plants* (16%), *Landscape Plants of the Southeast* (11%), Extension Service Publications (11%), *American Nurseryman* (9%), *Know-It, Grow-It* (9%), and *Landscape Management* magazine (5%) (Table 2). These six most frequently listed books or publications accounted for 60% of the responses. The two top-rated publications, *Manual of Woody Landscape Plants* and *Landscape Plants of the Southeast*, were also the two top-rated books or publications used by landscape architects for plant selections (Garber and Bondari, 1992c), indicating that these two widely read and influential publications are important sources of information in the landscape industry. Twelve respondents mentioned extension service publications rating, this the third-highest source of information.

Landscape installers were asked to identify opportunities for university personnel to assist their industry. The key opportunities for Univ. of Georgia personnel as identified by all firms (Table 3) were to 1) provide telephone hotline support for immediate advice to the commercial industry

(21%), 2) provide in-house training (21%), 3) facilitate testing and introduction of new plant varieties (16%), and 4) provide updates of available information and research findings (14%). Three additional areas of opportunity for university personnel were to 5) provide more information on plant care in the landscape (9%), 6) continue to tie all segments of the industry together (New Alliance program) (7%), and 7) provide faster soil test results (4%). Eight percent responded that university personnel were currently doing a good job helping landscape installers. With one exception, the degree of importance of the seven opportunities identified for university personnel to assist landscape installers were agreed on by all firm. The notable exception was the most frequently listed opportunity by large firms. They assigned the highest priority to the continuation of the current university effort (New Alliance program) to encourage all segments of the green industry to--work together (28%). This may be related to the fact that large firms have a significantly larger percentage of their projects designed by landscape architects (Garber and Bondari, 1994a) and are most affected by decisions of landscape architects.

Because landscape architects specify plant material for a large portion of the landscape projects handled by landscape installers, their potential impact on landscape installers is significant (Garber and Bondari, 1994a). Landscape installers were asked to identify opportunities for landscape architects to assist them in supplying better products to the landscape consumer (Table 4). For all firms, the most frequently identified opportunity was to specify plants that are available in the marketplace (25%). The next four most-frequently identified opportunities for landscape architects were to 1) involve installation and maintenance companies during design phase (18%), 2) specify plants that are hardy or adapted to the landscape (15%), 3) specify site-specific soil amendments and plant material (12%), and 4) provide

Table 1. Sources of information used by landscape installers to determine which plants to purchase.

Source	Importance (%)			
	Not important	Somewhat important	Important	Very important
Consultation with local grower	9.9	16.9	38.0	35.2
Nursery catalogs	13.5	23.0	40.5	23.0
Producer trade shows (SNA, GGIA)	11.0	21.9	46.6	20.5
Other landscape contractors	16.7	31.9	33.3	18.1
Plants observed at botanical and public gardens	13.5	24.3	44.6	17.6
University-sponsored seminars	9.7	29.2	44.4	16.7
Trade journal articles	14.9	31.0	41.9	12.2
Plant locators	52.8	30.5	11.1	5.6
Recommendations of landscape architects	21.1	35.3	38.0	5.6
Extension service publication	21.6	46.0	27.0	5.4

Table 2. Publications used by landscape installers as a source of information about plant installation.

Source ^a	Respondents	
	No.	Percent
<i>Manual of Woody Landscape Plants</i> (Dirr, Stipes Publishing, Champaign, 111.)	18	16.2
<i>Landscape Plants of the Southeast</i> (Halfacre and Shawcroft, Sparks Press, Raleigh, N.C.)	12	10.8
Extension service publication	12	10.8
<i>American Nurseryman</i> (American Nurseryman Publishing Co., Chicago)	10	9.0
<i>Know-It, Grow-It</i> (Whitcomb, Lacebark Publications, Stillwater, Okla.)	10	9.0
<i>Landscape Management</i> (Advanstar Communications, Cleveland)	5	4.5

^aRespondents were asked to list up to three books or publications that were most valuable as a source of information regarding plant installation.

Table 3. Opportunities identified for Univ. of Georgia personnel to help landscape installers supply better goods and services.

Opportunity for university personnel	Response (%)			
	Firm size ²			
	Small	Medium	Large	All
Provide a hotline for immediate professional advice to the commercial industry including notification of state-wide problems; quick on-site response to problems	25.0	22.7	14.3	21.1
Provide more in-house training (in Atlanta and around state) to include design and installation seminars and certification programs	20.8	22.7	21.4	21.1
Facilitate the testing and introduction of new plant varieties, to include sites around the state	12.5	13.7	21.4	15.5
Provide a list of available information, publish more newsletters and research findings	12.5	18.2	7.1	14.1
University personnel are currently doing a good job	8.3	9.1	0.0	8.5
Provide more information on plant care in the landscape to include pest problems, pest diagnosis, and pesticide use	12.5	9.1	7.3	8.5
Continue to encourage cooperation among growers, landscapers and landscape architects (New Alliance program)	4.2	0.0	28.5	7.0
Provide faster soil test, will pay for faster service	4.2	4.5	0.0	4.2

²Firm size based on 1993 wholesale value of plant material purchased: small (<\$50,000), medium (\$50,000-\$200,000), large (>\$200,000).

³Percent response calculated for each category of firm size: small, medium, large, all firms.

a list of nurseries for scarce items or allow substitution (11%). Three other less-frequently mentioned opportunities were: 5) to increase client awareness of the relationship between quality and cost (8%), 6) to consider final size of plants during design (7%), and 7) to specify a greater variety of plant material (5%). Good agreement existed among different firm sizes on the rating of the listed opportunities. However, medium (13%) and large (16%) firms identified the need to stress quality and awareness of cost more often than small firms (0%). The small (32%) and medium firms (27%) more often mentioned the need to specify plants that are available in the marketplace than large firms (16%).

To identify additional opportunities for nurserymen, landscape architects, and university personnel to assist landscape installers, the respondents were asked to list the most common complaints they received from their customers regarding plant material installed (Table 5). The most frequently mentioned customer complaints were 1) plant material not meeting size specifications or excess size variation in a block of plants (35%); 2) lack of consistency in plant quality (20%); 3) unrealistic expectations regarding early plant care required of customers (15%); 4) suboptimal condition of plants upon arrival (15%); 5) poor site preparation and plant installation (11%); and 6) poor-quality tree root balls (4%). About 92% of the complaints received by the large firms were associated with plant specifications, plant quality, and condition on arrival; issues that could be addressed by plant producers. Plants below specifications or excess size variation among plants was the most frequent complaint received by all firm sizes. The complaints regarding site preparation and plant material installation were received by small (16.7%) and medium (15.0%), firms but not large firms (Table 5). It appears that this complaint could be addressed directly by landscape installation firms. Large landscape firms register a much higher percentage of their complaints due to lack of consistency in quality (38.5%) than small (11.1%) or medium (15.0%) firms. This could be due, in part, to the recent finding that small and medium landscape firms buy more plants from rewholesalers (Garber and Bondari, 1994a). This generally involves personal selec-

tion of plants. Better quality control by the large landscape installation firms at the point of receipt or at the nursery could help alleviate this type of complaint.

Implications for plant producers

Landscape installers placed a high value on nurserymen as a source of information about which plants to purchase. As such, nurserymen are in a position to influence which plants are purchased by landscape installers. The survey results suggest that direct contact between nurserymen and landscape installers with proper use of plant material emphasized would be well-received. Exhibiting at producer sponsored trade shows and supplying landscape installers with current product catalogs could help nurserymen direct purchases to their current product line.

A marketing program designed to influence plant selection by the landscape trade should consider that landscape installation firms rely on landscape architects as a source of information on plant selection (Table 1). Previous work (Garber and Bondari, 1994a) demonstrated that landscape architects design the projects for about 76% of the plant material purchased by landscape installers. Therefore, landscape architects have a substantial influence on which plants will be in demand. Landscape architects should be a key marketing focus for nursery programs and for university educational programs designed to educate and influence plant selection in the landscape industry. The group that has the greatest influence on plant selection, landscape architects, generally receive very little formal training regarding plant material. This may explain landscapes with improper matching of plant material to site location. This situation represents a great training or education opportunity for environmental horticulture faculty. They are in a position to educate the landscape architectural profession and influence plant selection in the landscape industry. University publications and programs on plant selection and site preparation should be directed to landscape architects, in addition to the traditional landscape installer clientele.

The top-rated books or publications used by landscape installers are an influential source of information, and nurs-

erymen should become familiar with their content. For instance, nurserymen should have new plants listed in *Landscape Plants of the Southeast*. This would educate landscape installers and landscape architects while stimulating demand for a new product.

Increased communication between nurserymen and landscape architects could help improve their working relationship with landscape installers and stimulate demand for plants offered by nurserymen. Landscape installers indicated that landscape architects could assist them by specifying plants that are available in the marketplace, providing a list of nurseries that stock scarce items, and specifying plants that are adapted to the target landscape environment. Nurserymen could facilitate these three needs by sending plant availability lists to landscape architects and grouping available plants by their preferred landscape location.

The customer complaints received by landscape installers provide nurserymen with insight on things they can do to increase the satisfaction of the landscape consumer. Although landscape installers have final responsibility for the quality of plants they install, nurserymen could help reduce the number of complaints associated with the excessive variation in plant size and quality. In some cases, it may require a better understanding of what the landscape installer expects. Consistent grading standards at the nursery could ensure consistent plants within and between shipments. While nurserymen may not have total control over shipping conditions, they can ensure that plants are prepared properly for shipping. Also, nurserymen could follow up on shipping problems and work with landscapers on solutions.

Implications for university research and extension programs

Previous work (Smalley, 1993) summarized the horticulture industry view of university curriculum and necessary skills for undergraduates. However, this is the first published work to identify the landscape industry priorities for univer-

sity research and extension programs and to propose a model support program. Well-focused university programs will enhance the value of university personnel as a vital resource for the landscape industry.

The feedback from landscape installers suggests that a university outreach program to target this industry should include several components.

1) *A quick response mechanism to solve landscaper problems.* This could include a manned telephone line to answer immediate problems and regular site visits by university personnel to diagnose problems. The nature of respondent comments suggests that a 1-900 telephone line would be acceptable if it were staffed with a professional dedicated to problem resolution. This person should be centrally located and able to coordinate with county, area, and state specialists for quick-response site visits. University diagnostic labs could isolate commercial samples for soil tests or pest identification and expedite information transfer to the landscaper. Georgia landscapers would pay more for faster soil test service, an indication that service quality is more important than price. If universities cannot financially provide a quick-response service, they might consider assisting in the setup of such in the private sector and serving as an ongoing resource. The quick-response service was of particular interest to many small and medium firms.

2) *University extension programs should provide on-site training, with at least a portion of the program tailored to the host firm.* The industry appears to have two types of training needs: a) general professional development that results in certification, which confers a degree of professionalism to the industry; and b) on-site training that addresses problems and opportunities in the industry and also deals with problems of the host firm. The former should be conducted in a central location and should address fundamental industry skills. This was identified as one of the two top-rated needs in this survey and was identified equally by firms of all sizes. The national trade association for landscapers (Associated Landscape Contractors of America) is focusing its efforts on

Table 4. Opportunities for landscape architects to help landscape installers supply better goods and services.

Opportunity for landscape architects	Response (%)			
	Firm size ¹			
	Small	Medium	Large	All
Specify plants that are available in the marketplace, tag trees and plants at nursery to ensure availability species, quality, and specifications	32.0	26.7	16.1	24.7
Involve installation and maintenance companies during design phase, visit sites during design and installation phases, allow more time for bidding	12.0	23.3	19.5	17.6
Specify plants that are hardy or adapted to the landscape location for better survival, including plants that are more insect- and disease-resistant	20.0	10.0	10.7	15.3
Specify site-specific soil amendments and plants	12.0	6.7	16.1	11.8
Provide a list of nurseries for scarce or difficult-to-find items or allow substitution of scarce items	8.0	10.0	10.7	10.6
Increase client awareness of expense, stress importance of quality, do not support low bid with low quality	0.0	13.3	16.1	8.2
Keep in mind future appearance and size of plants and not just immediate appearance	8.0	6.7	5.4	7.1
Specify a greater variety of plant material	8.0	3.3	5.4	4.7

¹Firm size based on 1993 wholesale value of plant material purchased: small (<\$50,000); medium (\$50,000-\$200,000); large (>\$200,000).

²Percent response calculated for each category of firm size; small, medium, large, all firms.

Table 5. Response of landscape installers to the question, "What are the most common complaints you receive from your customers regarding plant material installed"?

Customer complaints	Response (%)			
	Firm size ^a			
	Small	Medium	Large	All
Plants do not match specifications, size variation in same container and plants too small for price	38.9	30.0	30.8	35.2
Lack of consistency in plant quality (size, color), plants meet height specifications but are not full, too leggy, chlorotic evergreens	11.0	15.0	38.5	20.4
Early care by customer (do not water) and unrealistic expectations	11.0	25.0	7.7	14.8
Condition of plants upon arrival from nursery (too much bark in media, plants arrive dry, not hardened off before shipping, pot-bound)	22.2	5.0	23.0	14.8
Poor soil or bed preparation, irrigation, system does not meet expectations, planting and staking method	16.7	15.0	0.0	11.1
Poor quality root balls (trees) or lack of root pruning	0	10.0	0.0	3.7

^aFirm size based on 1993 wholesale value of plant material purchased: small (<\$50,000), medium (\$50,000-\$200,000), large (>\$200,000).

^bPercent response calculated for each category of firm size: small, medium, large, all firms.

a national certification program that can be adopted by state organizations (personal communications).

On-site training may be time-consuming, but it provides an opportunity for immediate impact and enhances the chances for implementation of new procedures and technology. In Georgia, half of the landscape firms are located in the metropolitan Atlanta area, which increases the feasibility of on-site training. Generally, landscaping activity is associated with metropolitan areas and higher income. The concentrated audience provides an opportunity to make efficient use of time and resources. In addition, initial focus on the large firms could result in a significant economic impact with a small number of sessions. The findings in this study substantiate the conclusions from industry training sessions in Colorado (Panter, 1994) that industry desires on-site training and that on-site training would increase participation and impact.

3) *The landscape installation industry needs access to current research and extension information.* State extension specialists might consider mailing an annual list of all extension literature relating to landscape installation and maintenance. Landscape installers identified pest management as an area of particular interest. The publications list should include all available material related to business management, plant selection, installation, and estimating project costs. Extension specialists should be proactive in promoting the available literature to the target industry so that the university is viewed as an important source of current information.

4) *The landscape installation industry in Georgia would like the University of Georgia to have an active role in the evaluation and introduction of new plant varieties.* According to this survey, the industry is interested in plant material that performs well with low maintenance, including less use of water and pesticides. If landscape architects are also exposed to new, low-maintenance plant material, they can help landscape installers achieve low-maintenance landscapes by specifying these new types of plants.

5) *The concern of large firms that competitors bid below what is viewed as the reasonable cost of a job* (Garber and Bondari, 1994a). This suggests the need for continued efforts to educate the industry on how to estimate job costs.

(6) *Many large firms surveyed suggested that university*

personnel continue the current effort to foster a closer working relationship between segments of the landscape industry (Table 3). This suggests an important role for university personnel to enhance the interaction between different segments of the industry as well as serving the needs within a given segment. University personnel can serve as a nonbiased third party that develops ways for the industry to improve efficiency through effective interaction or marketing between different segments of the industry.

7) *The rated importance of producer-sponsored trade shows in the selection of plant material for landscape projects by landscape installers* (Table 1) and *landscape architects* (Garber and Bondari, 1992c). This makes these events an attractive forum for transferring university technology. University-sponsored displays could include: a) new plant introductions and their proper use in the landscape; b) proper installation of caliper-size trees; c) display of extension publications, trade journal articles and other landscape publications; and d) demonstrations on how to use new technology or equipment. Industry trade shows attract large audiences and could serve as an efficient and highly visible forum for technology transfer.

Because university resources are a limiting factor in meeting client needs, the development of a strategy for serving the landscape industry would help allocate resources. It is unlikely that any single university program would have sufficient resources to meet all of the expressed needs. One strategy to minimize necessary resources is initially to target time-consuming programs to the large firms. There are relatively few firms (20%) that account for a major portion (75%) of the plant material installed. Another important decision is whether the support programs should deal with the short-term diagnostic needs of the industry. This is an important need but requires a sustained, well-organized interdisciplinary team effort. To enhance support for university programs, industry groups should be involved in program planning. A challenge for the university system is to focus on a few priority areas so that support programs generate meaningful results within resource limitations. University personnel must demonstrate that the target industry will benefit far more than they invest in such educational programs.

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