

Economics and Marketing

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Update on The State of the Green Industry: 2019 National Nursery Survey Results

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Significance to Industry The U.S. green industry has historically been a fast-growing segment of the agricultural economy. However, the industry has reached the mature stage of its life cycle and is now growing slowly or even declining in some segments (Hall 2010). According to the Quarterly Census of Employment and Wages (U.S. Department of Labor, USDOL) report, employment in the principal sectors of the U.S. green industry reached a peak of 1.3 million jobs in 2007, then dropped sharply during the global recession of 2008-09. In 2013, industry employment had slightly recovered, but had not yet returned to pre-recession levels. However, by 2018, employment had recovered fully and surpassed the 2007 employment levels. To be competitive in the complex business landscape and effectively manage risk, nursery and greenhouse operators need reliable and up to date information about sales, transportation, marketing channels, product mix, irrigation, pest management and relevant production practices, to name only a few. The current report summarizes the state of the industry focusing on trends in production and marketing characteristics.

Nature of Work The *Green Industry Research Consortium* has regularly conducted national surveys to document production, management, marketing, and trade practices within the U.S. Green industry since 1989. The 2019 *National Nursery Survey*, which gathered annual information for 2018 or the most recent fiscal year completed, represents the seventh such effort by the GIRC. Previous national surveys for 1988, 1993, 1998, 2003, 2008, and 2014 were reported by Brooker et al. (1990, 1995, 2000, 2005) and Hodges et al. (2010, 2015). The overarching objective of these surveys is to document changes in business practices over time and across regions and provide information useful to stakeholders, including nursery/greenhouse growers, re-wholesalers, allied industry professionals, garden center retailers, state university Extension personnel and researchers. Information summarized in the survey report includes issues such as plant types and forms grown, labor, irrigation methods, water sources, and pest management, along with marketing practices (distribution channels, selling methods, in-store advertising practices, and social media presence), and a range of factors affecting pricing strategies and overall business growth and opportunities. The most recent survey also included information about point-of-sale and digital marketing strategies used by industry representatives, thus attempting to identify needs and opportunities in active and effective communication with end consumers.

Results and Discussion *Survey Methodology:* For the 2019 survey, a list of over 51,933 grower and plant dealer firms in the U.S. was compiled. The list contained information on the company name, contact person, mailing address, and in some cases, telephone numbers, email addresses, and type of business (grower or dealer). The listings for each state were obtained from members of the *National Plant Health Board*, an organization representing the plant health regulatory agencies in each state, which in most cases is the Department of Agriculture or its equivalent. A sample of 43,877 firms were used for the survey, including 14,995 randomly selected firms for the mail survey, and 28,882 firms with email addresses for the email (Internet) survey. Table 1 summarizes number of respondent firms, total number of employment by region, and annual sales reported.

Sales: Annual sales for 2018, as reported by 1,727 survey respondents, totaled \$2.392 billion (Bn) and averaged \$1.39 million (Mn) per firm. Sales through wholesale market channels totaled \$1.74 Bn and averaged \$1.34 Mn per firm, while sales at retail totaled \$474 Mn, averaging \$0.53 Mn per firm. The Southeast region had reported annual sales of \$542 Mn, followed by the Midwest (\$489 Mn), Pacific (\$485 Mn), Southcentral (\$280 Mn), Northeast (\$276 Mn), Appalachian (\$135 Mn), Mountain (\$125 Mn) and Great Plains (\$61 Mn). It should be noted that these are reported sales for the survey respondents only and they do not represent expanded sales for the entire industry. Average sales per firm were highest in the Pacific regions (\$2.05 Mn) and Southcentral (nearly \$2.00 Mn) regions, and lowest in the Northeast (\$0.93 Mn) and Appalachian (\$0.78 Mn) regions. Among individual states, average annual sales per firm were highest in Kansas (\$5.86 Mn), Arizona (\$5.57), Oklahoma (\$5.37), Oregon (\$3.43), and Idaho (\$3.16). Retail sales represented 20 percent of overall annual sales reported and ranged from 7 percent (Southeast) to 73 percent (Great Plains) across regions.

Employment: A total of 35,719 employees were reported for all U.S. Green industry survey respondents in 2018, including 20,631 (57.8%) permanent employees, 12,633 (35.4%) temporary, part-time or seasonal employees, and 2,455 (6.9%) foreign national employees authorized to work in the U.S under the H2A visa program. The Southeast and Midwest regions had the highest employment reported with 10,474 and 9,162 employees, respectively, followed by the Pacific (5,509), Northeast (3,446), Appalachian (2,695), Southcentral (2,590), Mountain (1,558), and Great Plains (285).

Plant Type Categories: Nationally, across all industry groups, the largest specific plant type sold was bedding plant-flowering annuals, representing 12.4 percent of total sales reported. Miscellaneous other non-specific plants represented 12.9 percent of sales. The second tier of plant types as a share of sales were herbaceous perennials (8.0%), deciduous shade/flowering trees (7.9%), evergreen trees (7.8%), liners, cuttings, and plugs (7.5%), deciduous shrubs (6.2%), and broad-leaved evergreen shrubs (5.8%). The third tier of plant types included bedding plants-vegetables, fruits, and herbs (5.3%), flowering potted plants (4.8%), roses (4.5%), and tropical foliage (4.3%). Plant types that represented less than 4 percent of sales were fruit trees (3.8%), narrow-leaved evergreen shrubs (3.3%), vines and ground covers (3.1%), sod (1.3%), and

Christmas trees (0.8%). Plant types that increased as a share of sales since the previous survey for 2013 were liners, cuttings, plugs, tropical foliage, flowering potted plants, roses, evergreen trees, narrow-leaved evergreen shrubs, and broad-leaved evergreen shrubs.

Product Form: Respondents were asked to indicate the percentage distribution of their sales by product form (root packaging media), including containerized, balled and burlapped, field grow bag, bare root, balled and potted/process balled, in-ground containers (including pot-in-pot), and other types (e.g., cut trees, budwood, scions, seeds, tissue culture plantlets, unrooted cuttings). Container-grown plants were the dominant product form reported in the survey, representing 69 percent of overall sales. The second tier of product forms included balled and burlapped (8.2% of sales), bare root (6.5%), and miscellaneous other forms (13.5%). In-ground containers/pot-in-pot systems, balled/potted plants, and field grow bags had less than 2 percent market share. The share for containerized products decreased by 4 percentage points compared with the previous national survey for 2013.

Sales Transaction Types: Respondents were asked to indicate the percentage of annual sales attributable to various transaction methods, including trade show orders, telephone orders, in-person orders, mail orders, website orders, email orders, and other types. The most common transaction method was traditional in-person orders, accounting for 50 percent of sales for all firms, 86 percent of sales for plant dealer firms, and 41 percent of grower firms. Telephone orders was the second most frequently used category, accounting for 24 percent of sales by all firms, and 11 and 28 percent for dealer and grower firms, respectively. Transactions via websites represented 13 percent and email orders accounted for 4 percent of all sales. Trade show orders and mail order sales each represented about 5 percent of all sales, up from 2 percent in 2013.

Market Distribution Channels: Respondents were asked to specify the percentage of total sales to different wholesale market outlets, including mass merchandisers, home centers, single location garden centers, multiple location garden centers, landscape firms, re-wholesalers, and others. The most popular outlet, as a share of total wholesale sales, was re-wholesaler firms representing 26 percent of sales nationally, followed by landscape firms (23%) and mass merchandisers (17%), single location garden centers (13%), direct-to-consumer (11%), home centers (7%), and multiple location garden centers (4%). The share of wholesale sales to mass merchandisers increased by 8 percent from 2013 and the share to re-wholesalers increased by 6 percent, while the share to single location garden centers decreased by 4 percent, and the share to multiple location garden centers remained about the same.

Advertising Media Expenditures: Respondents were asked to report the percentage of their total sales allocated to advertising and the percentage of their advertising budget spent on various media forms. Advertising expenditures represented 2 percent of total sales for all firms nationally. The most popular advertising media for all firms was social media, accounting for 23 percent of the total advertising budget, followed by trade

shows (19%), websites (13%), radio/TV (11%), trade journals (9%), catalogs (8%), gardening publications (5%), newspapers (5%), and other media forms (5%).

Irrigation Source: The use of water resources for agricultural irrigation and horticultural production is becoming an increasingly important issue. Respondents were asked to indicate the percentage of water used for irrigation that was obtained from the following sources: natural surface, recaptured sources, city (municipal) water supplies, and groundwater wells. Overall, 44 percent of respondents indicated that groundwater wells were a source of water for their irrigation, followed by city water supplies (21%), natural surface water (18%), recaptured sources (6%), and reclaimed water (2%).

Irrigation Method: The majority (50%) of respondents reported using overhead sprinkler irrigation, followed by drip irrigation (30%), sub-irrigation (4%), and other unspecified methods (19%). Among Internet survey respondents, 13 percent of firms also indicated using hand watering. Note that respondents were allowed to choose more than one water application method. Grower firms tended to use overhead (62%) and drip irrigation (40%) more than plant dealer firms (42% and 21%, respectively). The percentage of firms using water-conserving drip irrigation (4%) remained about the same as in the previous survey in 2013.

Integrated Pest Management Practices: The most common IPM practices used in 2018 were the removal of pest-infested plants (59%), cultivation/hand weeding (50%), spot treatment with pesticides (44%), inspection of incoming stock (40%), elevating or spacing plants for air circulation (38%), and alternating pesticides to avoid chemical resistance (37%). A second tier of practices followed by at least 20 percent of firms was ventilating greenhouses (30%), managing irrigation to reduce pests (28%), using mulches to suppress weeds (25%), adjust pesticides to protect beneficial insects (22%), and disinfecting benches and ground covers (22%). A third group of practices used by at least 10 percent of firms were adjusting fertilization rates (19%), identifying beneficial insects (19%), using pest-resistant varieties (17%), monitoring pest populations with a tarp or sticky boards (17%), using beneficial insects (15%), using bio-pesticides/lower toxicity (12%), and keeping pest activity records (10%).

Inter-regional Trade Flows: Regions with the largest share of product sales to other regions were the Appalachian (65%), Southeast (51%), Pacific (47%), Mountain (37%), Great Plains (35%), and Northeast (32%) regions, while the Southcentral and Midwest regions had a low proportion of sales outside of home regions. Individual states with the largest share of products sold to other regions were Virginia (82%), North Carolina (65%), Arizona (63%), Kansas (61%), Tennessee (60%), Florida (60%), Oregon (55%), and New York (52%). International exports represented less than 1 percent of overall sales, similar to the 2013 survey estimate. States with more than 1 percent share of international sales were Florida (5%), Louisiana (3%), North Dakota (3%), and Oregon (2%). Among foreign trading partner countries for U.S. Green industry products, Canada was the most frequently reported country, followed by the Caribbean Islands, Bermuda, and European Union.

Factors Affecting Price Determination, Geographic Expansion, and General Business: The eight factors considered as potentially affecting product prices were the cost of production, inflation, other grower prices, the grade of plants, market demand, product uniqueness, inventory levels, and last year's prices. With the average rating score of 2.9, cost of production was the highest-rated factor, followed by grade of plants (2.7), product uniqueness (2.7), market demand (2.7), other growers' prices (2.4), inflation (2.2), inventory levels (2.2), last year's prices (2.2), and other factors (2.0). Factors considered that potentially limit the geographic range or trading area for Green industry businesses included debt and equity capital availability, marketing, personnel, production, transportation, and plant offerings. The highest average ratings were for production, transportation, and plant offerings (2.8), followed by personnel (2.5), marketing (2.3), and equity and debt capital (1.8). Factors or issues that may potentially affect the overall business environment in the Green industry included weather uncertainty, land, market demand, labor, water supply, debt and equity capital availability, own managerial expertise, competition/price undercutting, environmental regulations, other government regulations, ability to hire competent management, and ability to hire competent hourly employees. The highest average importance rating score was for weather uncertainty and market demand (3.2), followed by labor (2.7), own managerial expertise (2.6), ability to hire competent hourly employees (2.5), competition/price undercutting (2.4), the balance of power with buyers/customers (2.3), environmental regulations and other governmental regulations (2.2), water supply, ability to hire competent management, and land (2.1), the balance of power with suppliers and vendors (2.0), equity capital (1.9), and debt capital (1.8).

Table 1. Number of respondents, employees and sales reported for 2018, by region, in the U.S. Green Industry survey

Region	Number of Respondent Firms	Employees Reported	Annual Sales Reported (million \$)
Appalachian	173	2,695	135.4
Great Plains	40	285	61.1
Midwest	360	9,162	488.7
Mountain	78	1,558	124.5
Northeast	297	3,446	275.9
Pacific	237	5,509	484.8
Southcentral	140	2,590	279.5
Southeast	402	10,474	542.3
Total	1,727	35,719	2,392.2

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