University of Kentucky
College of Agriculture, Food and Environment
Cooperative Extension Service

Characteristics of Kentucky's Nursery and Greenhouse Industries

Dewayne L. Ingram, Horticulture Department, University of Kentucky, and Hayk Khachatryan, Food and Resource Economics, University of Florida

The nursery and greenhouse industry in Kentucky is diverse and contributes significantly to the local and state economy. This industry represents the largest segment of Kentucky's sales of horticultural products and is comprised almost completely of farm families. Nursery and greenhouse operations have historically been characterized as separate production systems and crops. However, today primary nurseries may also have greenhouses and/or produce herbaceous perennials and annuals to satisfy their customer base. On the other hand, many primary greenhouse firms that once grew mostly annuals and potted flowering crops have expanded their product line to include herbaceous perennials, often finished in outdoor spaces. Nursery and greenhouse crops are produced and marketed in containers or grown in the field and dug and sold as balled and burlapped or bare root plants. Most of Kentucky's nursery and greenhouse crops are marketed in Kentucky and surrounding states.

Kentucky's nursery and greenhouse industry has grown at an average rate of 8 to 10 percent per year for many years. The most significant U.S. industry growth was in the 1980s and 1990s, but the most rapid growth of Kentucky's industry was between 2000 and 2008. The rate of increase has slowed in recent years as the industry is maturing. A recent publication reported U.S. sales of nursery and greenhouse crops to be more than $13.6 billion with a total economic impact of $28.7 billion in 2018, and Kentucky's sales were more than $46 million with a total economic impact of $96 million. The total employment (full-time and part-time) by Kentucky nursery growers in 2018 was 520 while landscaping services and landscape architectural service firms accounted for 8,233 and 157 jobs, respectively. Landscape and architecture service firms in Kentucky had 2018 sales of $346 million. The total U.S. green industry generated an estimated economic output impact of $348 billion.

Economists knowledgeable of this industry describe it as a "maturing" industry with a slower growth rate (3 percent to 5 percent) and tighter profit margins than during the rapid growth period. The demand for landscape plants by new home construction decreased dramatically during the recession of 2007-09 and subsequently for a couple years during the slow recovery. However, since that time, demand has come back strongly, and shortages of some landscape plants were evident by 2013. Changes in the market to reflect environmental quality considerations (e.g. reforestation of cities, phytoremediation, and carbon offsets) impact the size of the market as well as the diversity of products necessary to satisfy that market.

The purpose of this publication is to characterize Kentucky's nursery and greenhouse industry in relation to the national and regional industry by gleaning information from the national surveys conducted by the Green Industry Research Consortium for 2018, 2013, 2008, and 2003. The survey data will be augmented by information obtained from the experiences of the authors and from conversations with nursery owners. Information is presented relative to employment, plant types sold, product types, markets and marketing channels, sales methods and marketing practices, advertising expenditures, integrated pest management practices, water sources, and irrigation methods. The Green Industry Research Consortium, a multi-state research project of the southern region's agricultural experiment stations (S-1065), conducts a survey of the U.S. nursery and greenhouse industries every five years. The University of Kentucky's Agricultural Experiment Station is a member institution in the consortium, represented by Dr. Dewayne Ingram. The most recent survey was conducted in 2019 in all 50 states, reflecting 2018 business operations. Drs. Hayk Khachatryan, Alan Hodges, Charles Hall, and Marco Palma took the lead on this survey and published the results in the Southern Cooperative Series Bulletin No. 421, Trade Flows and Marketing Practices with the U.S. Nursery Industry, 2018 (Khachatryan et al., 2020; available at https://saaesd.org/wp-content/uploads/sites/5/2020/08/National-Green-Industry-Survey-Summary-Report-2019-final-08.30.2020-1.pdf).

The Kentucky data have been extracted from this study, and additional computations have been made from the original data for this publication. Kentucky's nursery and greenhouse industry firms were identified for the survey through the state's licensing and certification program. In the survey for 2018, for the first time, plant dealer firms (e.g. retailers, landscapers, florists, re-wholesalers) were included in the survey, as well as grower firms. Questionnaires were mailed to 178 growers in Kentucky, and an electronic version of the survey was emailed to 400 firms. Based upon the number of surveys that were undeliverable, it was determined that the validated business population in Kentucky was 669. The 2018 data were compared to the 2003, 2008 and 2013 data for selected characteristics. Results of the 2003, 2008 and 2013 national survey were published as Southern Cooperative Series Bulletins No. 404, 411 and 420 available at http://www.greenindustryresearch.org.

General Characteristics

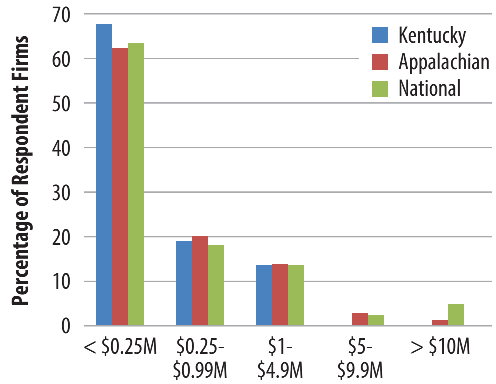
The majority of Kentucky firms responding to the latest edition of the national survey had both wholesale and retail sales with 51 percent of total sales being wholesale. Fifty-eight percent of the firms responding sold in wholesale markets, and 27 percent had retail sales. This breakdown between wholesale and retail sales for Kentucky firms has remained similar over the past three 5-year survey periods. Of firms responding to the 2018 survey, 35 percent of total sales were at the retail level, which was similar for the Appalachian region, including Kentucky, North Carolina, Tennessee, Virginia and West Virginia, (30 percent) and nationally (20 percent).

The average annual sales reported by Kentucky respondents was $360,000 per firm, while average annual sales were 1.4 million in the national and $782,000 for the Appalachian region. The average sales per firm was higher in the 2013 survey. There were more smaller firms and fewer of the large firms responded in 2018 than in 2013. Sixty-eight percent of Kentucky firms responding had annual sales less than $250,000; 19 percent had sales of $250,000 to $999,999; 14 percent had sales of $1 million to $4.9 million; and no respondents had sales of $10 million or greater (Figure 1). The statistics are similar to regional and national data; 62-64 percent of respondents had less than $250,000 in annual sales, and 18-20 percent had sales of $1 million or greater.

Khachatryan and his co-authors also determined annual sales for the entire Green Industry using data from national economic and business databases. The broader Green Industry includes lawn and garden equipment manufacturing, landscape services and wholesale/retail distribution of plants and allied products, as well as nursery and greenhouse production. The estimated direct output for the U.S. green industry in 2018 was $160.0 billion. Kentucky's green industry output was $535 million. This amount was less than most other states in the Appalachian region (NC–$4.1 billion, VA–$3.2 billion, TN–$2.3 billion), but was greater than West Virginia ($239 million). The total economic output contributions (including indirect and induced regional multiplier effects) for the U.S. was $348 billion and $3.8 billion for Kentucky in 2018. A review of the data from this study indicates the authors were conservative on their projections of annual sales. Often, government reports of sales in the horticultural industries are significantly less than reality due to a variety of reasons, such as misclassification of firms, and non-coverage of small, non-employer firms. In 2003, the value of the Kentucky nursery and greenhouse industry published by the USDA was slightly more than $75 million. This reflects significant growth in the industry from 2003 to 2013.

Sixty-three percent of Kentucky respondents established their operations in the 2000s, 51 percent were established after 2009, 28 percent were established in the 1990s and 26 percent before 1990. Generally, Kentucky has experienced the greatest entry of firms into the industry since the turn of the century, lagging somewhat the timing of the U.S. as a whole. The growth of the Kentucky nursery and greenhouse industry coincides with state investments by the KY Agricultural Development Fund in research, extension, marketing assistance and advertising cost-share programs through the Kentucky Horticulture Council.

Figure 1. Percentage of responding Green Industry firms by size categories of annual sales for Kentucky, the Appalachian Region, and the United States.



The growth rate was also influenced greatly by the economic recession in 2008-10 during which sales were down as well as planting of future crops.

Employees

The average number of employees of responding Kentucky firms was 1.5 permanent/full-time employees and 7.7 temporary/part-time/seasonal employees in 2018 which represents a higher percentage of employees being part-time than in 2013. Although the percentage of responding firms in various annual sales categories were similar to the national average, Kentucky's average employment per firm was lower than the regional and national average (Table 1). Approximately 53 percent of the employees engaged in Kentucky nursery and greenhouse crop production in 2018 and 2013 were permanent employees, compared to approximately one-third in 2008. Seventy-three percent of respondents in 2018 indicated that the number of permanent employees stayed the same over the past five years. Forty-one percent of respondents increased temporary or seasonal employees in that period. H2A employees comprised 6.8 percent of work force for grower respondents. No H2A employees were reported by survey respondents in 2013. Responding dealers/retailers only employed full-time permanent employees. The absence of a few of the larger firms from the survey data could have skewed these numbers. Kentucky respondents to the 2013 survey averaged 4.5 permanent employees and 4.1 temporary employees at that time and Kentucky respondents to the 2003 survey averaged 7.2 permanent employees and 6.2 temporary employees at that time. This represents a trend of decreased permanent employees per firm over these 10 years. For comparison, previous surveys revealed that on average, Kentucky respondents reported reducing their permanent employees by 9 percent and decreased temporary employees by 17 percent over

Table 1. Average number of permanent and temporary employees per firm in 2018.

	Permanent Employees	Temporary Employees
Kentucky	1.5	7.7
Appalachian region	15.3	10.0
United States	11.0	7.5

the five years from 2004 to 2008. By comparison, respondents had increased their permanent employees by 11 percent and temporary employees by 14 percent over the previous five-year period, 1999-2003. Nationally, there was little change in number of employees per firm between 2003, 2008, and 2013 surveys. Data from an economic impact assessment of the green industry as a whole revealed 2.3 million jobs contributions for the U. S. and 15,229 jobs for Kentucky.

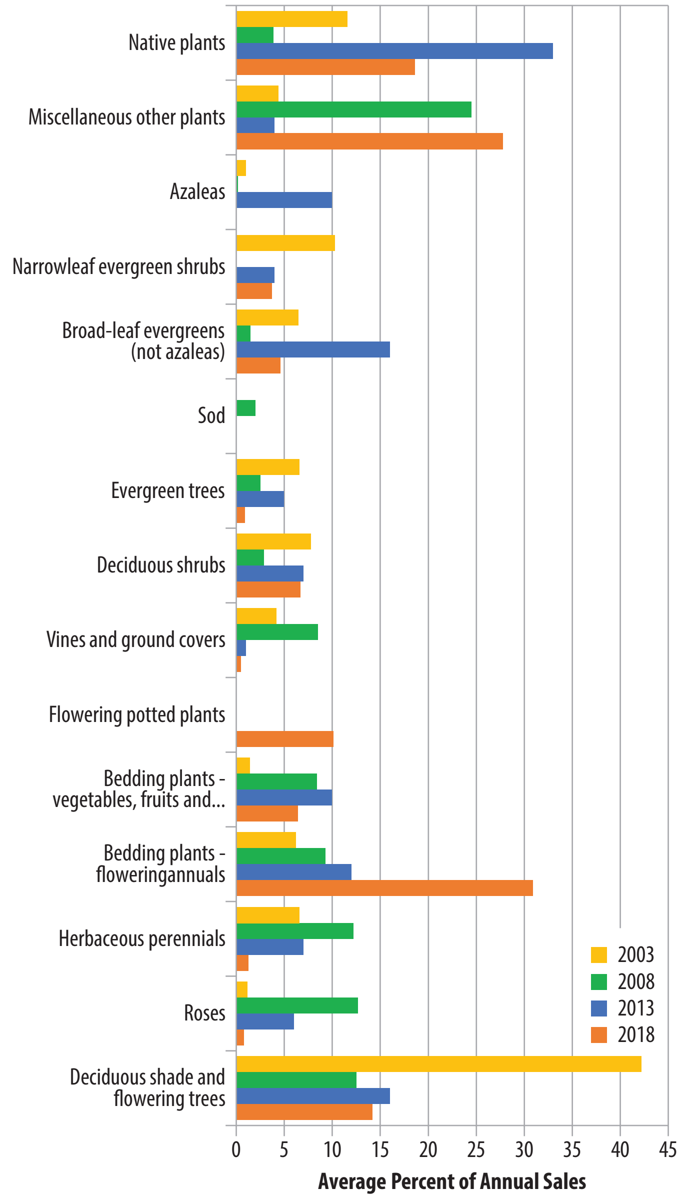
Plant Types Sold

Approximately 14 percent of total sales by Kentucky grower respondents were from deciduous shade or flowering trees in 2018, compared to 15 percent in 2013, 12 percent in 2008 and 42 percent in 2003 (Figure 2). The vast majority of deciduous shade trees are produced by six field nurseries in Kentucky. It could be possible that a significant portion of the deciduous tree production was missed due to sampling error or lack of response by the larger firms.

Bedding plants, flowering annuals and vegetable, fruit, and herb transplants, represented 8.6 percent of sales in 2003, 18 percent in 2008, 22 percent in 2013, and 37 percent in 2018. Flowering annuals alone represented 31 percent of total plant sales of respondents in 2018. Ten percent of plant sales were from flowering potted plants. This is the first year in the national survey that this category was reported separately. This growth is likely from the expansion of larger greenhouse operations as well as an increased number of smaller growers adding "color" to their product mix. Roses were 1 percent of sales in 2003, 13 percent in 2008, 6 percent in 2013, and less than 1 percent in 2018. New continuous-bloom, low-maintenance landscape roses such as the Knock Out® rose and the presence of the rose rosette disease contributed to the up and down nature of the production of this crop in the past 15 years. Most retailers buy bare-root roses and put them in containers for seasonal sales. Herbaceous perennials increased from 6.6 percent of sales in 2003 to 12.2 percent in 2008 and were back down to 6 percent in 2013 and down farther to 1 percent.

Kentucky industry respondents reported that 19 percent of plant sales were from native plants of all types in 2018, which was much more than reported for 2008 (4 percent) and 2003 (12 percent) but less than 2013 (33 percent). This percentage was greater than for the Appalachian region (12 percent) and the national average (9 percent). Some of this apparent decrease in the sales percentage for native plants is possibly due to acknowledgement of the number of traditionally grown plants that are actually native as well as an increased demand for native plants to meet the demand for restoration and conservation projects and possibly, garden center customer demand.

Figure 2. Average percentage of total annual sales by plant type for Kentucky respondents in 2003, 2008, 2013, and 2018.



Product Forms

Containerized plants comprised 75 percent in 2018 compared to 79 percent of total sales in 2013, 57 percent in 2008, and 39 percent in 2003 (Figure 3). This percentage is similar to the region average. Tennessee nurseries marketed a much higher percentage as bare root than Kentucky or other states in the region. This is consistent with the reported increases in that 15-year period for bedding plants, roses, herbaceous perennials and others that are primarily grown in containers. Respondents reported a smaller percentage in pot-in-pot (in-ground containers) production of trees and shrubs during that period. Balled and burlapped plants averaged 13 percent of respondents' sales in 2018, 15 percent of sales in 2013, and 13 percent in 2008. This is down from 49 percent in 2003. These findings are consistent from our observations in terms of the range of individual producers; however, they differ somewhat from our assessment of a relatively small number of large nursery operations that account for a significant portion of the production and may not have responded to the survey. For these nurseries, a significant portion of their sales come from field-produced trees. Personal observations also showed a decrease in field-grown tree sales and reduced re-planting following the recession of 2008-2009.

The share of total plant sales as bare-root plants was 25 percent in 2008 but 1 percent or less in 2018, 2013, and 2003. Advancement of several hybridizers of herbaceous perennials (daylily and hosta in particular) in Kentucky could account for the increase in bare-root plants sold as well as the increased mail order sales and sales of herbaceous plants from 2003 to 2008. Increased container sales in 2008 through 2018, coupled with personal observations of Kentucky operations of a trend toward more production and marketing a higher percentage of herbaceous perennials in containers which could explain the decrease in bare root plant sales from 2008 to 2018.

Markets and Marketing Channels

Thirty-three percent of annual wholesale sales for Kentucky industry respondents in 2018 were to landscape firms while this had been 43 percent in 2013, 78 percent in 2008, and 67 percent in 2003 (Figure 4). Again, this could reflect the product mix in Kentucky, in which larger tree sales were traditionally very important. The percentage of total sales to mass merchandisers doubled from 4 percent in 2003 to 8.2 percent in 2008 and reached a high of 16 percent in 2018. The percentage of total sales to home centers was 30 percent in 2013 from less than 1 percent in 2008 and 2003, and 2 percent in 2018. The percentage of total sales to single-location garden centers (14 percent) was up in 2013 and 2018 compared to previous surveys. Sales to multiple-location garden centers were still insignificant while sales to re-wholesalers (21 percent) has increased in importance in the past 10 years.

The percentage of plants grown in Kentucky by survey respondents that were sold in Kentucky increased from 74 percent in 2003 to 79 percent in 2008 to 98 percent in 2013 and decreased to 60 percent in 2018. For all U.S. respondents, 60 percent of sales were in-state. The average in-state sales among 2018 respondents in the Appalachian region was 48 percent.

Figure 3. Average percentage of total annual sales by product form for Kentucky respondents in 2003, 2008, 2013, and 2018.

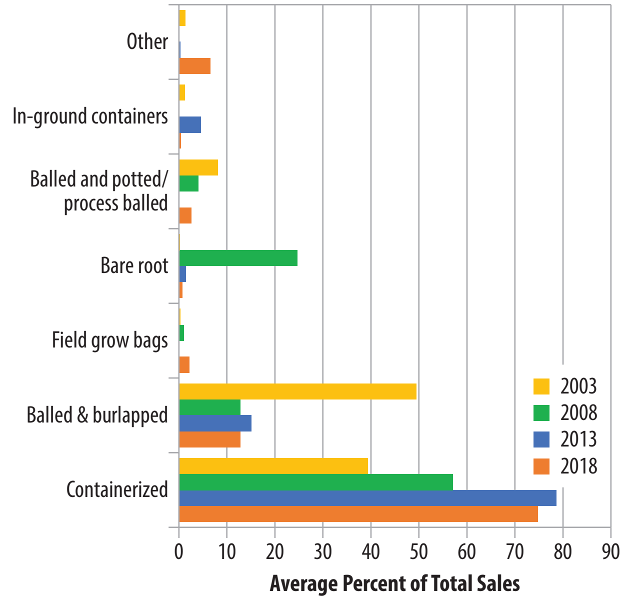
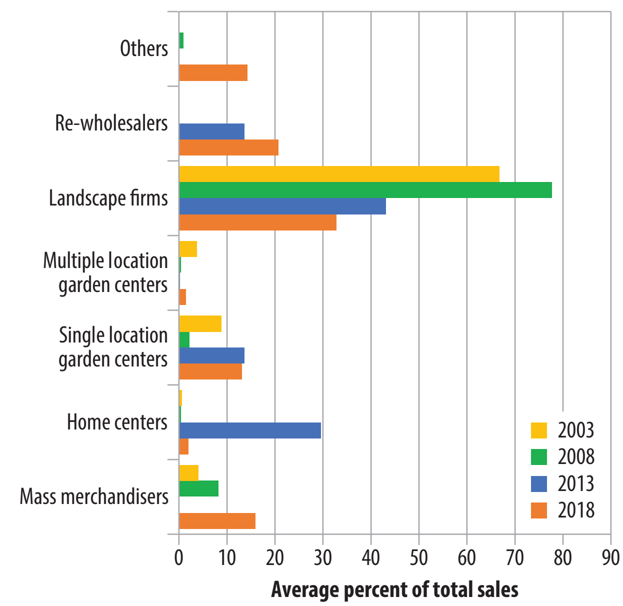


Figure 4. Average percentage of total annual sales by marketing channel for Kentucky nursery and greenhouse firm respondents in 2003, 2008, 2013, and 2018.



Nationally, consolidation among larger growers and increased plant sales by the larger retailers such as home centers and mass merchandisers in recent years appears to be related. In many cases, the big box stores are limiting the number of vendors who supply plants to their stores. This and the general economic climate have encouraged consolidation of production nurseries. As one might expect, independent garden centers, retail nurseries and small landscapers purchase from small growers, depending upon product mix. This seems to be the case in Kentucky. Retail nurseries and garden centers are offering a diverse plant selection and related products and focus on value-added services to customers through knowledgeable staff and consistent high quality throughout the seasons. A regional buyers' survey in 2004 showed that plant quality was the most important characteristic for wholesale purchases, followed by ease/speed/cost of delivery, wholesaler relationship, variety and volume available, and then price. Some changes in the market from consumer landscaping to environmental quality considerations (reforestation of cities, phytoremediation, and carbon offsets) might have a positive effect on Kentucky's sales of field-grown trees suitable to northern markets.

Sales Methods and Marketing Practices

More than 48 percent of total sales of Kentucky respondents in 2018 were through in-person orders, similar to that in 2013 (51 percent) and down from 2008 and 2003 (Figure 5). Those figures were comparable to the national and Appalachian region averages. Eighty-seven percent of sales for growers/retailers was through in-person sales but was only 20 percent for grower only firms. Trade show orders, mail orders, and internet sales accounted for less than 3 percent of total sales in 2018 for Kentucky as it was true in 2013 which was slightly less than for regional and national respondents. Website visits and social media were important sources of customers for internet sales. Telephone orders accounted for 28 percent of sales in 2018, down from 47 percent in 2013, but similar to the percentages for the region and national responses. Sixty-four percent of sales for Kentucky respondents were to repeat customers, almost identical to the Appalachian and national averages. Eleven percent of sales were through negotiated sales—sales in which price or terms were discussed and/or adjusted upon negotiation between buyer and seller—compared to 2 percent in 2013 and 23 percent in 2008. This figure likely is due to price stabilization caused by higher demand in 2013 relative to product availability, particularly for some field-grown tree species.

Advertising Expenditures

Kentucky survey respondents spent an average of 2 percent of their total 2018 annual sales in advertising compared to 7 percent in 2013 and 6 percent in 2008 (Figure 6). In 2018, firms responding in the Appalachian region and nationally also invested 2 percent of their total annual sales in advertising. Percent of advertising expenditures allocated to catalogs (print and CDs) for Kentucky respondents in 2018 was 16 percent. Respondents in 2008 reported that almost 16 percent of their advertising expenditures were for catalogs, but almost 50 percent in 2008 and less than 1 percent of 2013 respondents invested in catalogs. Respondents in the Appalachian region spent 18 percent of their advertising dollar on catalogs in 2018.

Fifteen percent of 2018 advertising expenditures were in radio/television, down from 72 percent in 2013 and 24 percent in 2008. Generally, firms with retail sales were the primary Kentucky users of radio/television advertisement and social media while firms that are primarily wholesale used the internet to advertise their products, as would be expected. Many wholesale nurseries have developed their own website, which includes up-to-date inventory information. The average por-

Figure 5. Average percentage of total annual sales by sales method for Kentucky respondents in 2003, 2008, 2013, and 2018.

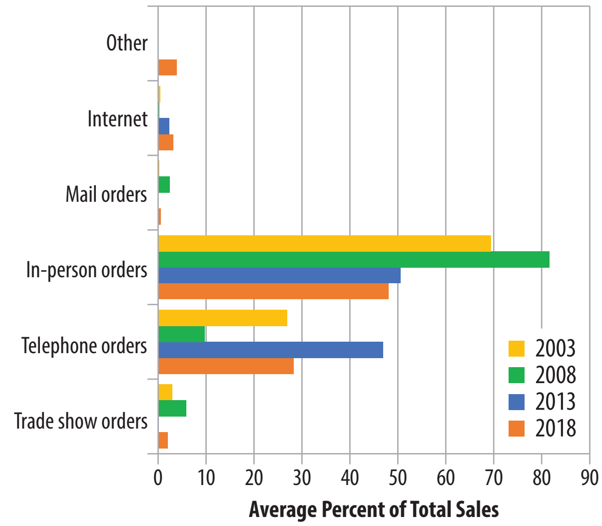
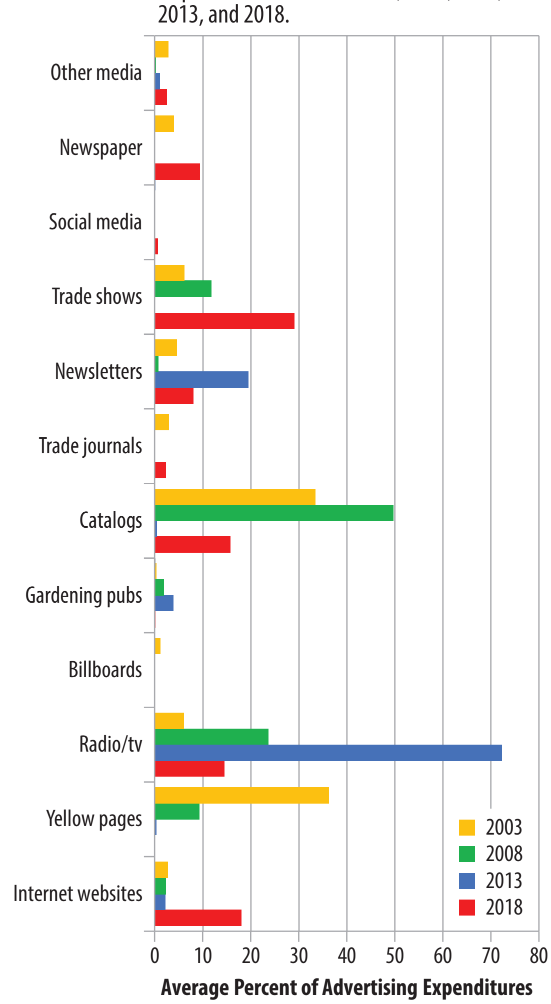


Figure 6. Percent of advertising dollars invested by Kentucky's wholesale and retail respondents in various media, 2003, 2008, 2013, and 2018.



tion of advertising expenditures for websites in 2018 was 18 percent. Radio and television advertising expenditures were much less for the Appalachian region (4 percent) and nationally (11 percent). Trade show expenses constituted 29 percent of advertising expenditures in 2018, up from 12 percent in 2008, but were not an important expenditure for 2013 respondents. Trade show expenditures reported by Appalachian region were 23 percent of advertising expenditures and averaged 19 percent for national respondents. The percentage of Kentucky respondent's advertising expenditures for newsletters increased from 4 percent in 2003 to 8 percent in 2008 to 19 percent in 2013, but was only 8 percent in 2018.

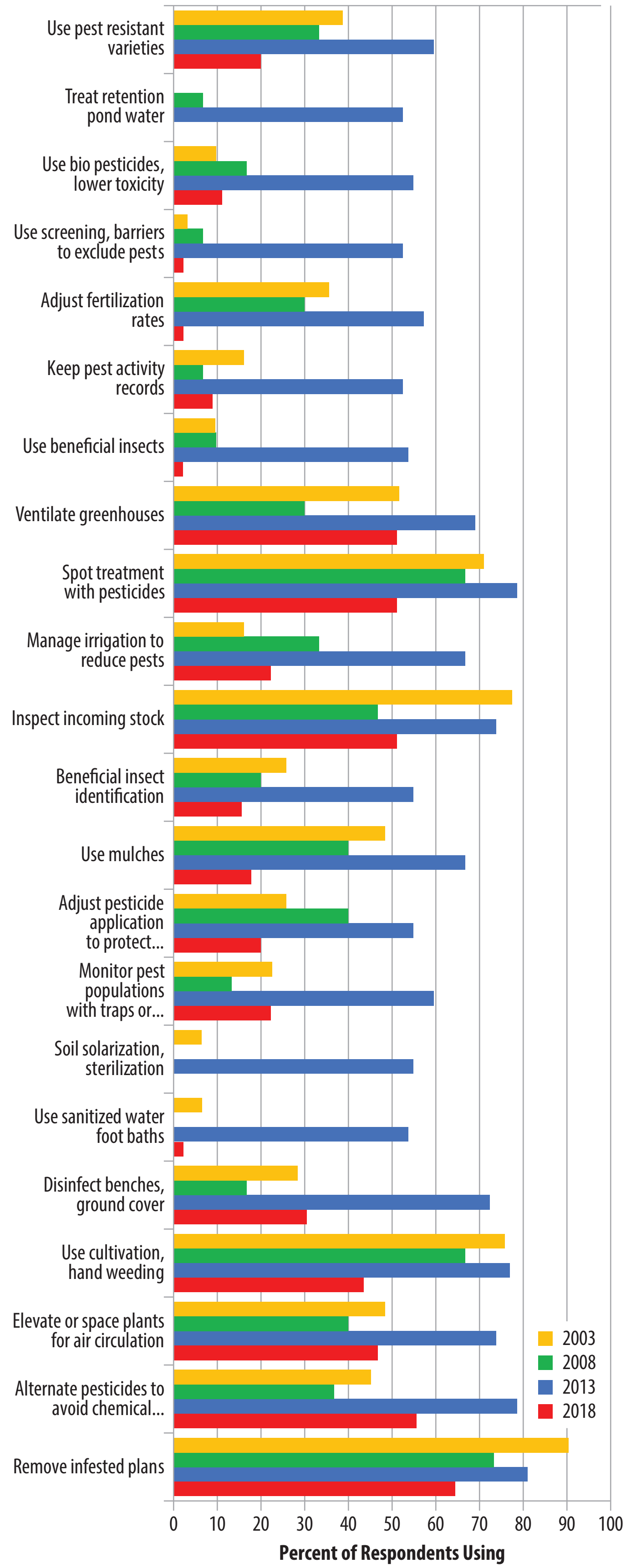
Survey respondents participated in an average of 0.4 trade shows with an exhibit in 2018, down from 1.4 in 2008 but up from 0.25 in 2013. The average respondent in 2018 attended 6 trade shows, more than the 1.4 per year in 2003 and 2008, and 1.6 in 2013. Nationally, growers attended an average of 0.8 trade shows annually with an exhibit and 0.7 shows without an exhibit in 2018.

The increased expenditures for advertising expressed as a percent of sales from 2003 to 2008 to 2013 could be due to the use of advertising cost-share funds available through a Kentucky Horticulture Council grant from the Kentucky Agricultural Development Fund. Participation drastically increased in the advertising cost-share program from 2002 through 2007 when over $514,000 was invested into grass roots projects in all segments of horticulture across the Commonwealth. In 2005 alone over $165,000 was invested and matched with $174,817 producer dollars. The program ended in 2015. However, the advertising cost-share program helped fund such advertising strategies as market signage, print and radio advertising, brochures, websites and point-of-purchase materials, and helped producers learn how to plan their own marketing campaigns as well as featuring the Kentucky Proud logo in all of their advertising. This cost-sharing program increased participation in the Kentucky Proud Program from 200 businesses in 2004 to nearly 1,100 in early 2008. It is assumed that firms learned the value and return on investment for advertising from participating in the cost share program. These data were provided by the Kentucky Department of Agriculture's Marketing and Value-added Division, which administered the advertising cost-share program for the Kentucky Horticulture Council.

Integrated Pest Management Practices

Several integrated pest management (IPM) strategies were widely practiced by survey respondents. The majority used removal of infested plants, alternating pesticides to avoid chemical resistance, inspect incoming stock, spot treatment with pesticides and ventilation of greenhouses (Figure 7). Generally, there were fewer respondents in 2018 reporting IPM strategies than in previous years. Other practices important to respondents included elevating or spacing plants for air circulation, use of cultivation or hand weeding, disinfecting benches and grown cover, managing irrigation to reduce pests, and using pest-resistant varieties. Using pest resistant varieties and alternating pesticides to avoid chemical resistance were not as an important tool for dealers and growers, as would be expected given the

Figure 7. Percent of 2003, 2008, 2013, and 2018 Kentucky respondents using specific integrated pest management practices.



relatively short residency of plants at a retail store. Firms with retail sales were more likely to use beneficials for insect control.

A primary focus of Kentucky IPM education for nursery production has been targeted pest identification and pesticide application for best efficacy to reduce pesticide use and cost and increase plant quality. A scouting educational program, including on-nursery workshops since 2009, appears to have increased the use of such strategies. Educational workshops offered almost annually from 2008 to 2014 introduced a pest-control strategy for reducing pesticide use by one half. Independent surveys of wholesale nursery managers participating in these programs reported reduced pesticide use through pest identification as well as improved plant quality through pest and nutrient management and refined scheduling of pesticide applications. Growers using scouting data in conjunction with the Half-Rate Program reduced the volume of pesticide applied per acre (same concentration) by half. The six-year cumulative economic impact for the state, as estimated by growers, was $1.7 million. IPM educational programs for nursery production has been reduced in recent years. This fact, along with fewer larger nurseries responding to the 2018 survey could have contributed to the reduced reporting of IPM strategies. Based on personal observations, many of the IPM strategies are now normal operating practices in the Kentucky wholesale nurseries.

Water Sources and Irrigation Methods

More than 33 percent of Kentucky respondents in 2018 used water from municipal sources and constituted 40 percent of average water use for these firms (Figures 8 and 9). That is down from 52 percent and 80 percent respectively in 2013. Twenty-seven percent of the firms responding irrigated from natural surface water, and 18 percent used water from wells. Only 4 percent of respondents drew water from recaptured sources, and none irrigated from reclaimed sources. In the Appalachian region, 33 percent of responding firms irrigated from wells. This is twice the percentage of responding firms in Kentucky. Slightly less than a third of Appalachian region firms reported they irrigated from natural surface water and/or municipal sources. Therefore, Kentucky respondents depended more on municipal water and less on water from wells than Appalachian region respondents. Of dealer respondents, 100 percent used municipal water and depended on that source for 100 percent of their water use. Dealer respondents did not use surface water or reclaimed/recaptured water sources. This could be expected because many dealer firms are in populated areas with limited area for surface water retention. For the firms identified as grower/dealers, 36 percent used municipal water, 36 percent used surface water, and 27 percent used well water for irrigation.

It would appear that municipal water sources are predominately used in retail and small wholesale establishments, and many of Kentucky nurseries have retail sales. Wholesale producers, especially the larger ones, depend much more on surface water and wells. Future water availability will likely limit the location of wholesale nurseries in Kentucky, as it has in other states, and the price of municipal water is expected to continue to increase.

Figure 8. Percent of Kentucky respondents using various irrigation water sources in 2018.

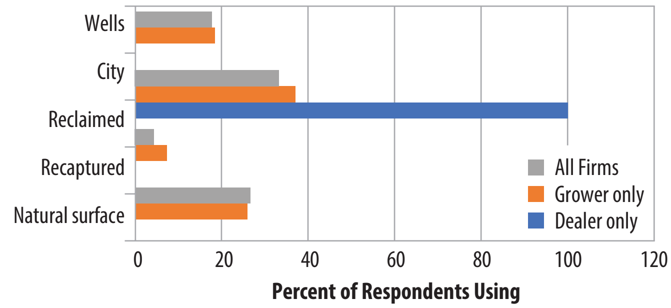
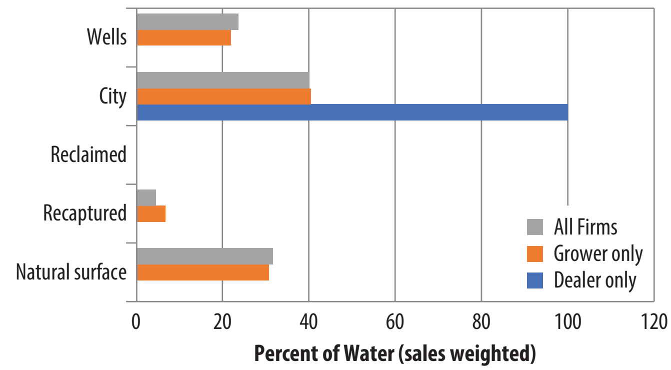


Figure 9. Average water use (weighted by sales) from water sources by Kentucky firms responding in 2018.



Forty-nine percent of all Kentucky respondents used drip irrigation, and 58 percent of all respondents used overhead irrigation (Figure 10). Use of sub-irrigation was reported by 2 percent of respondents. Six percent of water applied was through sub-irrigation. Likely, sub-irrigation was used in greenhouse operations with specialized crops and cropping systems. Almost all responding firms used hand watering for a portion of their irrigation. However, 7 percent of grower respondents used hand watering and applied only 2 percent of their irrigation water using that method (Figure 11). Growers and grower/dealers applied most of irrigation through overhead sprinklers. However, responding firms identified as dealer/grower applied most of their irrigation water by hand, followed by overhead sprinklers and drip. Generally, smaller firms with a large variety of plant types and sizes in a relatively small area often use hand watering.

Figure 10. Percent of Kentucky respondents using various irrigation methods in 2018.

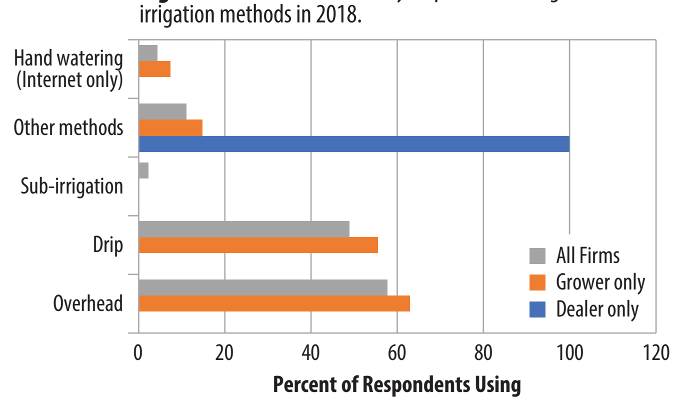


Figure 11. Average water use (weighted by sales) by irrigation method for all Kentucky firms responding in 2018.

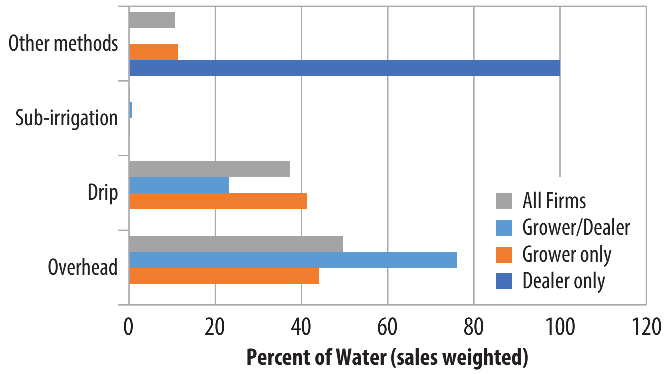
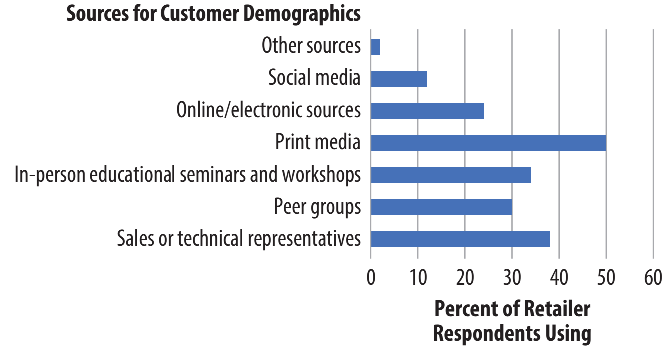
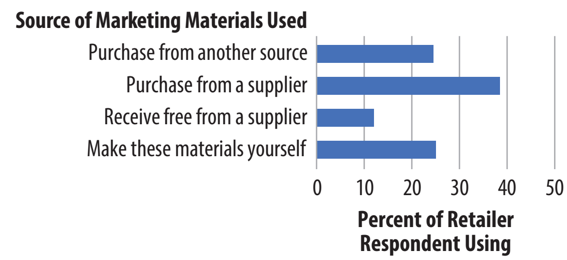


Figure 12. Percentage of various sources of customer demographics used by Kentucky retail respondents in 2018.



Thirty-three percent of Kentucky respondents increased their water use per acre in the past five years while 64 percent said their water use was unchanged. This percentage was comparable to the averages in the Appalachian region and nationally. This could be related to the observation of extended dry periods during the summer although there were periods of high rainfall. Twelve percent of respondents used some type of "smart" irrigation system, which was similar to the region (13 percent) and nationally (11 percent). Nurseries could apply up to 33,000 gal/A/year for field and 2 M gal/A/year for container production if using overhead irrigation. For container production, a significant portion of the water applied by overhead irrigation does not reach the container substrate but larger operations usually collect runoff in ponds and reuse for irrigation.

Figure 13. Percentage of various sources of marketing materials used by Kentucky retail respondents in 2018.



Retail Marketing

New to the national survey in 2019 was the inclusion of specific questions for retail nurseries. It has been established that understanding the demographics of the customer base, or potential customer base, is valuable as retailers target their marketing efforts. Kentucky retailers responding to the survey indicated that print media was the most important source of demographic information (Figure 12). Sales or technical representatives, in-person educational seminars and workshops and peer groups were used by at least 30 percent of respondents. Online or electronic sources were only used by 24 percent of respondents. Perhaps educational programs introducing this source of demographic information would be valuable to retailers.

Kentucky nursery retailers purchased on average 39 percent of their marketing materials from a supplier and 25 percent purchased the materials from another source and made these materials in house (Figure 13). Signs constituted most point-of-sale materials used, followed by bench tags and posters (Figure 14). By far, Facebook was the social media platform of choice by retail nurseries responding, followed by Instagram, and to a lesser extent, Linked-In (Figure 15). Websites were used by retailers first to provide general information, followed by the announcement of product availability and online sales (Figure 16).

Figure 14. Percentage of various sources of point-of-sales materials used by Kentucky retail respondents in 2018.

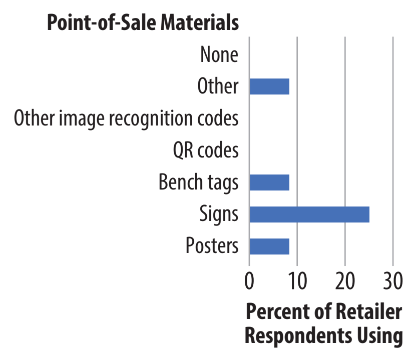


Figure 15. Percentage of social media platform use by Kentucky retail respondents in 2018.

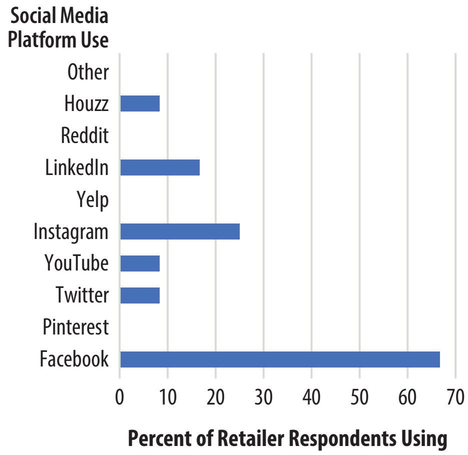
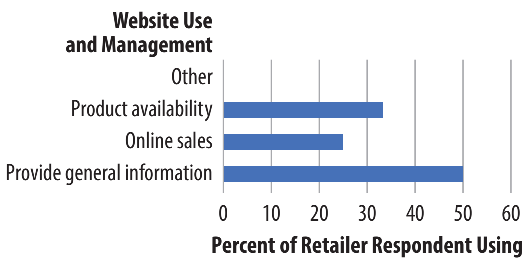


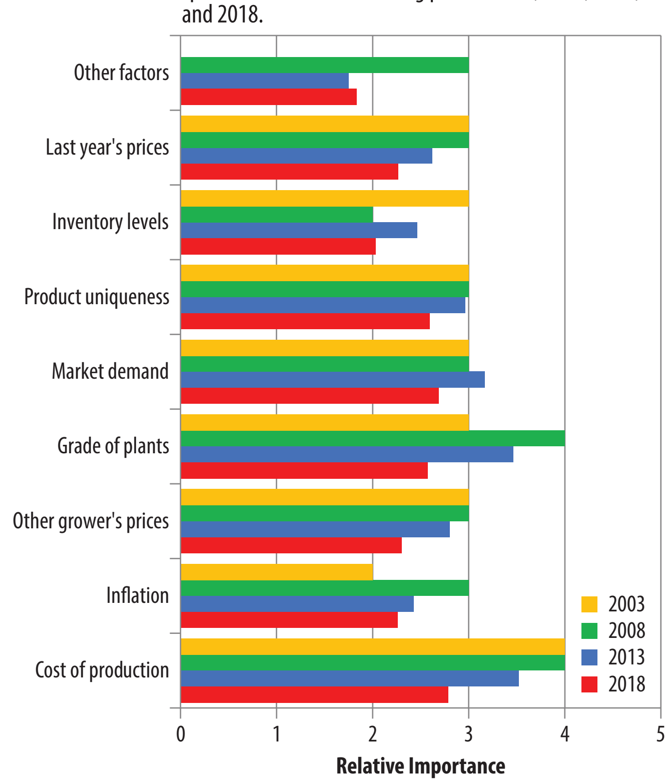
Figure 16. Percentage of website use strategies used by Kentucky retail respondents in 2018.



Factors Affecting Price, Geographic Expansion and Business

Nursery and greenhouse managers were asked about factors impacting their businesses that affected their decisions regarding product price and geographic expansion of the business. The predominant factors (Figure 17) in establishing product price for Kentucky nursery and greenhouse managers were grade of plants, cost of production, and market demand and product uniqueness. Although grade of plants was important in 2018, the relative plant quality and cost of production was more pronounced in 2008 compared to other years, as growers were marketing plants in a relatively weak economic environment. This was especially true for firms primarily producing field-grown plants that require many years to produce and have a limited shelf life for marketing. This can also be seen in that other firms' prices were less important in establishing price in 2008 and 2003 relative to other factors. Other growers' prices, product uniqueness, and last year's prices were of moderate importance in 2013. These responses were similar to the national and Appalachian region data.

Figure 17. Relative importance (1 = not important and 4 = very important) ranked by Kentucky respondents for specific factors in establishing price in 2003, 2008, 2013, and 2018.



Interestingly, the respondents for 2018 ranked production factors, transportation availability, personnel, and plant offerings as important or very important to their consideration of expanding their business to other geographic areas (Figure 18). Marketing factors were somewhat less important, with equity capital and debt capital being the least important among the choices given. The national and Appalachian region rankings of these factors were comparable to Kentucky respondents.

Market demand and weather uncertainty were the dominant factors affecting overall business success as perceived by Kentucky respondents, as they were in previous survey years (Figure 19). Other important factors included their own managerial expertise, labor, competition, governmental issues, equity capital, water supply, and land. Again, Kentucky rankings were similar to the national and Appalachian region averages. Price undercutting was more important to the respondents in 2008 and 2013 than 2003 and 2018, as prices were reduced in a highly competitive market from 2009-2013, when supply and demand were more balanced.

Figure 18. Relative importance (1 = not important and 4 = very important) ranked by Kentucky respondents for specific factors determining geographic expansion in 2003, 2008, 2013, and 2018.

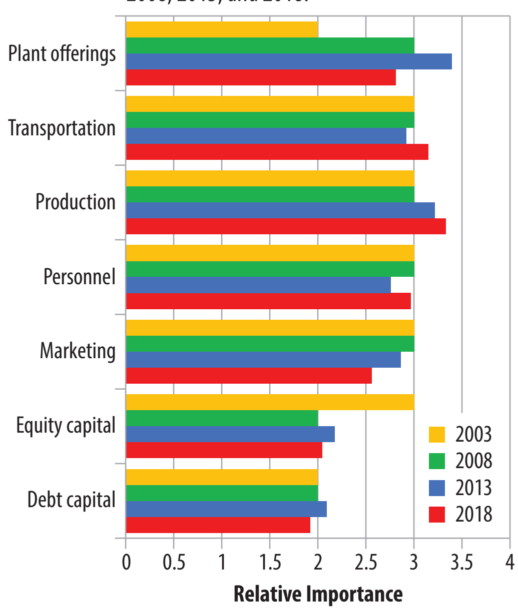
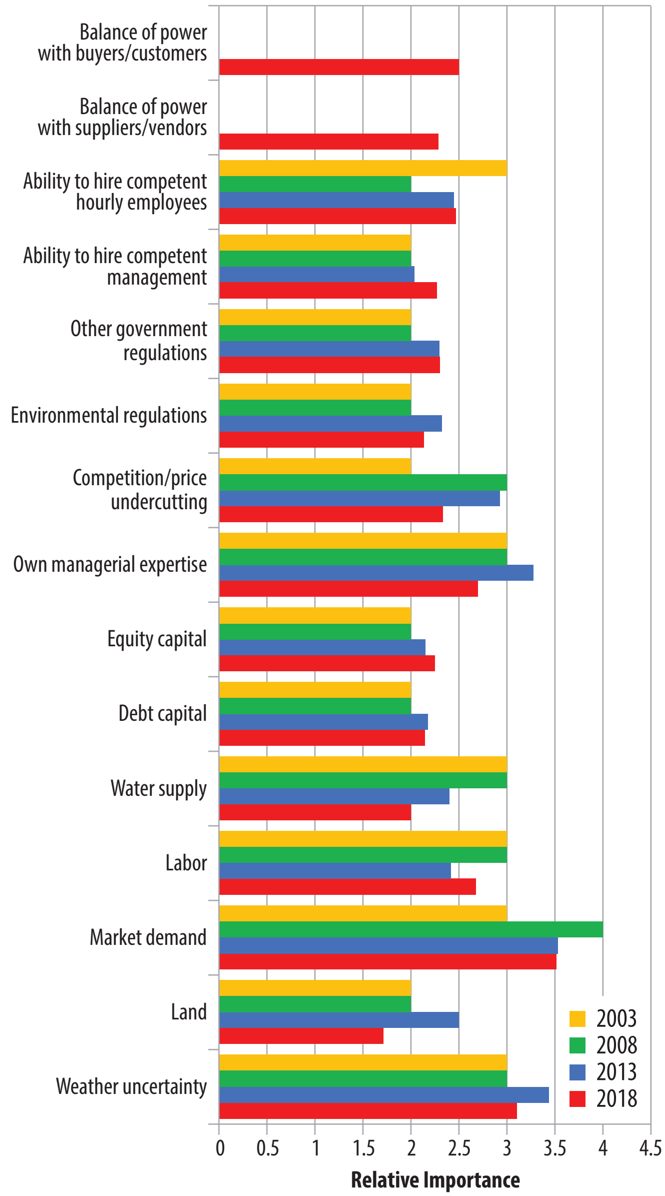


Figure 19. Relative importance (1 = not important and 4 = very important) ranked by Kentucky respondents for specific factors important to their businesses in 2003, 2008, 2013, and 2018.



Summary and Implications

The nursery and greenhouse industry is a significant portion of Kentucky's horticulture industry and the state's important agricultural economy. Industry leaders can utilize this information when working with other agricultural leaders and state government. The characteristics of the industry can be used not only by those looking at the larger scale of the agricultural economy but can help individual nursery and greenhouse owners compare their activities with the state, regional, and national averages. Among the important issues to be addressed on the industry-wide scale are the dependence on municipal water, required changes in marketing strategy as dictated by market demands, and the need for continued Kentucky research and education programs related to IPM and more efficient and sustainable production systems.

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