

Sales, Trade Flows and Marketing Practices within the U.S. Nursery Industry¹

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Abstract

This article provides an overview of marketing and production practices of the U.S. nursery and greenhouse industry in 2008, based on information collected through the 2009 National Nursery Survey, the fifth such survey since 1988. Lists of nursery firms for each state were assembled from the respective Department of Agriculture (Plant Health Board) offices responsible for licensing nursery producers. The compiled state lists resulted in a combined listing of 38,000 certified nursery operations. A total of 3,044 usable questionnaires were returned from a sample of 17,019 firms for an effective 17.9 % response rate. The survey was administered through both mail and internet questionnaires, with repeated contacts attempted, and a follow-up telephone survey on non-respondents. Survey respondents reported total annual sales of \$4.45 billion in 2008, or an average of \$1.73 million per firm, and total employment of 48,833 permanent and temporary jobs. Based on an adjusted population of validated active firms (19,803), total U.S. nursery industry sales were estimated at \$27.14 billion, and total employment was estimated at 262,941 jobs. The highest sales and employment were in the Pacific and Southeast regions, led by the states of California and Florida. Overall, 77 percent of sales were made through wholesale outlets including landscape firms, single-location garden centers, and re-wholesalers.

Index words: green industry, marketing practices, nursery survey, trade flows.

Significance to the Nursery Industry

Over the past two decades, there have been shifts in the structure, conduct, and performance of the U.S. nursery and greenhouse industry. Surveys have examined the present business climate, but little has been done to understand what types of changes are taking place and whether or not these changes are regional in nature. Understanding the types of structural changes taking place allows nursery and greenhouse managers to better evaluate their business decisions as compared to industry trends.

Introduction

The 2009 National Nursery Survey, which gathered information for calendar year 2008, represented the fifth such effort by the Green Industry Research Consortium. Basic descriptive results of the previous surveys were reported by Brooker et al. (1, 2, 3, 4, 5, and 7). The objective of these surveys was to document changes in production and management practices of the U.S. nursery and greenhouse industry

over time in individual states and regions, and to provide information useful to growers, allied industry professionals, extension personnel and researchers.

The 'green industry' complex includes production firms such as nursery, greenhouse, and sod growers; input suppliers; wholesale distribution firms including importers, brokers, re-wholesalers, and transporters; horticultural service firms providing landscape and urban forestry services such as design, installation, and maintenance; and retail operations including independent garden centers, florists, home improvement centers, and mass merchandisers or other chain stores.

There is little doubt that the green industry has experienced unprecedented growth, innovation, and change over the last couple of decades. However, slower growth in demand and tighter profit margins point to a maturing market (6). Survival in the next decade will require a progressive mindset and a willingness to strengthen existing or develop new core competencies, which may incur greater risk. While the outlook may be somewhat fuzzy in terms of the growth and nature of consumer demand, it is clear that innovativeness will continue to be a requisite skill in ensuring the survivability and profitability of green industry firms in the future.

The specific objective of this research project was to obtain data regarding green industry producers to permit analyses of selected production and marketing factors in order to provide growers with information to help with strategic planning decisions. Also, this type of information is beneficial to other industry professionals such as extension personnel, researchers, and input suppliers. This data collection effort began because of the void of industry-wide data regarding production and marketing practices in the green industry. It should also be noted that the data collected by these surveys supplement and update, rather than duplicate data collected by the USDA National Agricultural Statistics Service for floriculture and nursery crop sales.

Materials and Methods

Information collected in this survey included annual sales, fulltime and part-time employment, plant types produced,

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native plants, product forms, market distribution channels, interstate and international trade flows of finished products and propagation materials, selling methods, advertising forms, irrigation water sources and application methods, integrated pest management practices, year of business establishment, computerized business functions, and factors affecting business growth and pricing. Because of space limitations, only the results pertaining to sales, employment, plant types, market channels, and trade flows are provided herein.

All information collected pertained to business operations during 2008. The questionnaire and survey protocol were approved for compliance with ethical standards for human subjects research by the University of Florida Institutional Review Board.

The content of the National Nursery Survey has remained very similar over time, but has evolved in response to changing characteristics of the industry. Many questions in the survey asked respondents to indicate the percentage share of the total activity for each specific item, with all items supposed to sum to 100 percent. Other questions were posed as checklists or 'Yes'/'No' answers, or asked respondent to rate items on a 4 point scale of importance.

A list of over 38,000 U.S. nursery firms in all 50 states was developed for the survey, as summarized in Table 1. The largest ten states in terms of nursery business population were: Florida (7,848), California (5,105), Pennsylvania (2,894), New York (2,266), North Carolina (1,641), Texas (1,445), Ohio (1,114), Tennessee (1,062), Illinois (1,034) and Georgia (1,018). This number compares with 50,784 nursery/greenhouse operations in the United States in 2007 reported by the Census of Agriculture (8).

The listings for 47 states were obtained from representatives to the National Plant Health Board, an organization comprised of the heads of the relevant plant health regulatory agencies, which in most states is housed within the Department of Agriculture or its equivalent. All commercial growers and dealers of live plants are required to be registered and annually certified for compliance with phytosanitary regulations, so these lists of plant growers can be considered exhaustive to the extent of force of law. Some states make their lists of nursery growers available on website, while others provide it upon request. The lists contained information on company name, contact person, mailing address, and in some cases telephone numbers and email addresses. For three states lists of firms were obtained from the state nursery association (AZ), or the OneSource business directory (MT, KS), in order to provide coverage for all 50 states. The final lists used for the survey were screened to eliminate duplicate entries and companies not involved in plant production.

A stratified random sampling plan was used to select firms from the list for the mail survey. Firms were stratified in four size classes based on open production area (acres), greenhouse area (square feet) or plant inventory (number units), whichever applied in each state. Information on size of operation was available for 20 states. In cases where a firm had both open production and greenhouse areas, the larger size categorization was applied. A total of 14,964 firms were selected for a mail survey, including 100 percent of the large firms, 60 percent of the medium firms, 32 percent of small firms, 20 percent of very small firms, and 45 percent of firm of unknown size. The stratified sampling plan was designed to provide a greater sampling rate for large and medium-sized firms in order to maximize responses of these

Table 1. Survey respondents and industry population in the U.S. by state and region, 2008.

Region/ State	Number survey respondents	Population of firms	Validated business population ^a
Appalachian	332	3,509	2,025
KY	30	352	238
NC	151	1,641	954
TN	101	1,062	614
VA	43	357	168
WV	7	97	51
Great Plains	45	290	150
KS	12	79	40
ND	6	44	23
NE	11	88	46
SD	16	79	41
Midwest	481	5,148	2,888
IA	30	295	154
IL	75	1,034	567
IN	27	348	191
MI	83	952	486
MN	48	508	323
MO	38	633	360
OH	141	1,114	640
WI	39	264	167
Mountain	115	1,069	516
AZ	7	55	25
CO	23	243	127
ID	41	418	162
MT	8	33	17
NV	7	85	46
UT	9	137	72
WY	20	98	67
Northeast	644	8,060	4,610
CT	18	233	121
DE	21	90	47
MA	16	188	119
MD	35	417	218
ME	34	703	366
NH	3	58	30
NJ	52	792	413
NY	147	2,266	1,405
PA	275	2,894	1,672
RI	17	84	44
VT	26	335	175
Pacific	434	6,582	3,224
AK	15	64	33
CA	296	5,105	2,453
HI	19	180	94
OR	46	507	265
WA	58	726	379
Southcentral	216	2,648	1,216
AR	22	94	57
LA	44	514	320
NM	17	176	92
OK	19	419	141
TX	114	1,445	607
Southeast	774	10,708	5,174
AL	49	652	340
FL	556	7,848	3,800
GA	95	1,018	435
MS	28	492	235
SC	46	698	364
U.S. Total	3,041	38,014	19,803

^aValidated population based on telephone survey respondents reported inactive or ineligible.

firms, which typically represent a dominant share of industry activity, while still representing small or very small firms and staying within budget constraints for the project. Firms selected to receive the mail survey were screened by the U.S. Postal Service to validate addresses, which resulted in 839 addresses being eliminated, or 5.6 percent of the original sample selected, leaving a total of 14,123 firms that actually received the mailings.

Two complete mailings of the printed survey were conducted in June and July of 2009. Questionnaires were mailed to selected firms, together with postage-paid return envelopes, and a cover letter from the investigators explaining the purpose and benefits of the survey. The questionnaires and letters contained the logos of the sponsoring organizations to enhance the credibility and legitimacy of the survey. Return envelopes accompanying the survey mailings were imprinted with a code number matched to the mailing list, in order to identify respondents for purposes of sample extrapolation and quality control. Reminder postcards were mailed to respondents about one week after each survey mailing. Completed surveys were returned to Texas A&M University for data entry.

In addition to the mail survey, for the first time in the history of the National Nursery Survey, a sample of 2,896 firms in 12 states were surveyed via electronic mail, including all firms for which an email address was available. Firms to be surveyed via email were removed from the population considered for the mail survey to avoid duplication and minimize burdens on respondents. The online survey was administered using the SurveyMonkey service (SurveyMonkey.com) which supports batch email invitations, security-encrypted data recording, and automatic tracking of respondents. Three email invitations to participate in the survey were made in June, July and August 2009, with the second and third email invitations sent only to those firms that had not previously responded. Firms were invited to participate in the survey by clicking on a link to the survey website. Respondents were then explicitly asked for consent to participate in the survey, and were given the option to decline or 'opt-out' as required by anti-spam laws governing electronic communications. Consenting respondents were asked a qualifying question: 'Was your company actively involved in producing and marketing ornamental plants last year (2008)?' Respondents answering this question affirmatively were then directed to proceed with the survey, while those answering negatively were thanked and the survey was terminated. It should be noted that the online version of the questionnaire and emailed letters of invitation exactly matched the content of the printed/mailed surveys, except for the initial qualifying question, so the results are strictly comparable. Some 81 firms (2.8%) contacted for the email survey responded that they were inactive.

A total of 17,019 nursery firms were surveyed by both mail and internet methods (Table 1). The survey sampled 44.8 percent of the U.S. nursery population overall, but this percentage ranged widely among individual states, from 100 percent for Arizona to 26 percent in Maine. Valid responses were received from 3,044 firms, including 2,732 from the mail survey and 312 from the email survey, representing an overall response rate of 17.9 percent. These tabulations do not include questionnaires that were returned blank, or duplicate responses received from the same firms. States with the highest number of respondents were Florida (556), California

(296), Pennsylvania (275), North Carolina (151), New York (147), Ohio (141), Texas (114), and Tennessee (101). A few states had less than 10 respondents (AZ, MT, ND, NW, UT, and WV). Response rates were greater than 25 percent for the states of Wisconsin (35.8%), Montana (29.6%), Delaware (28.0%), Minnesota (26.2%), and Ohio (25.2%), but were less than 10 percent for New Hampshire, Oklahoma and West Virginia. Response rates for the mail survey (19.3%) were higher than for the internet (email) survey (10.8%). Overall, 85 percent of respondents reported the key information on annual sales.

The survey data were coded and entered into worksheets for analysis. Annual sales for each firm were estimated at the midpoint or average of the sales range indicated, unless the actual sales were specified. Sales for each product type, market channel, etc. within each firm were estimated from the annual sales data, together with the percentage breakdown reported, so that results represent sales-weighted averages.

Finally, a follow-up telephone survey was conducted in April 2010 with the purpose of testing for representativeness of the mail and internet surveys, and determining the share of the business population that is active and qualified, in order to estimate total industry sales and employment. Telephone interviews were conducted under subcontract to the University of Florida Bureau of Economic and Business Research. The survey contacted a random sample of 5,156 firms with telephone numbers available in 41 states. The firms were either not sampled previously or did not respond to the mail and internet surveys. Some 1,339 firms (26.0%) were judged to be ineligible or inactive based on the disposition of calls, including reasons such as no-answer, fax/data line, non-working number, or number changed. A total of 950 telephone interviews were completed, of which 29.5 percent of firms were currently inactive. Together, these two factors indicated that 52.1 percent of the U.S. population of firms $[(1 - 0.260) \times (1 - 0.295)]$ were active and qualified as valid nursery producers. The share of the business population that was validated ranged from 34 to 69 percent across states. For states in which no telephone surveys were conducted, or in which the telephone survey sample size was less than 20, the population adjustment factor was set at the national average (52.1%).

Expanded estimates of annual sales and employment in each state were based on the adjusted population of firms, multiplied by the average sales or employment per firm, representing the subset of firms that provided this critical information. The estimates were developed by stratified firm size classes, in states where this information was available, in order to avoid bias introduced by skewed firm size distributions. Information is reported for individual states, and for eight physiographic regions of the United States corresponding closely to the USDA Farm Production Regions.

Results and Discussion

Annual sales distribution. Annual sales were reported either as a specific amount or as a range, from less than \$250,000 to more than \$50 million (Table 2). Over 50 percent of all respondents were firms with less than \$250,000 in annual sales, while 9 percent of firms had sales of \$250,000 to \$499,000, 8 percent had sales of \$500,000 to \$999,999, and 17 percent had sales of \$1 million or greater, including 2.2 percent of firms with annual sales of \$10 million to \$49.99 million, and less than 1 percent indicated having annual

Table 2. Distribution of annual sales reported by green industry growers in the U.S. by state and region, 2008.

Region/ State	Annual sales range (million dollars)														Not reported
	< 0.25	0.25– 0.49	0.5– 0.99	1 to 1.99	2 to 2.99	3 to 3.99	4 to 4.99	5 to 9.99	10 to 14.99	15 to 19.99	20 to 29.99	30 to 39.99	40 to 49.99	50+	
	Percent of firms in each region/state														
Appalachian	46.4	10.2	9.9	8.1	4.2	1.5	1.2	1.8	0.3	0.3	0.3	0.3	—	1.2	14.2
KY	63.3	10.0	3.3	10.0	—	—	3.3	3.3	—	—	—	—	—	—	6.7
NC	43.7	11.9	11.3	6.0	2.6	1.3	1.3	0.7	—	—	0.7	—	—	1.3	19.2
TN	42.6	10.9	11.9	11.9	6.9	2.0	—	1.0	—	—	—	—	—	1.0	11.9
VA	51.2	—	7.0	7.0	7.0	2.3	2.3	7.0	2.3	2.3	—	2.3	—	2.3	7.0
WV	57.1	28.6	—	—	—	—	—	—	—	—	—	—	—	—	14.3
Great Plains	68.9	4.4	11.1	6.7	—	2.2	—	4.4	—	—	—	2.2	—	—	—
KS	66.7	8.3	—	16.7	—	—	—	8.3	—	—	—	—	—	—	—
ND	83.3	—	16.7	—	—	—	—	—	—	—	—	—	—	—	—
NE	63.6	—	9.1	9.1	—	9.1	—	—	—	—	—	9.1	—	—	—
SD	68.8	6.3	18.8	—	—	—	—	6.3	—	—	—	—	—	—	—
Midwest	58.8	7.9	6.0	4.8	2.5	0.6	1.7	1.5	0.6	0.2	1.0	0.4	—	0.8	13.1
IA	63.3	3.3	3.3	3.3	3.3	—	3.3	—	—	—	3.3	—	—	—	16.7
IL	64.0	6.7	5.3	4.0	2.7	—	1.3	—	—	—	1.3	—	—	1.3	13.3
IN	48.1	11.1	7.4	11.1	3.7	—	—	3.7	—	—	—	—	—	3.7	11.1
MI	47.0	7.2	8.4	4.8	2.4	—	2.4	—	1.2	1.2	—	1.2	—	—	24.1
MN	60.4	8.3	6.3	4.2	—	2.1	2.1	4.2	—	—	2.1	—	—	2.1	8.3
MO	65.8	7.9	10.5	2.6	2.6	—	—	—	—	—	2.6	—	—	—	7.9
OH	58.9	9.9	5.7	4.3	2.8	1.4	2.1	2.8	1.4	—	—	0.7	—	0.7	9.2
WI	69.2	5.1	—	7.7	2.6	—	—	—	—	—	2.6	—	—	—	12.8
Mountain	47.0	13.0	7.8	4.3	3.5	2.6	—	3.5	—	0.9	—	0.9	—	—	16.5
AZ	—	28.6	14.3	—	—	14.3	—	14.3	—	—	—	—	—	—	28.6
CO	39.1	8.7	—	4.3	8.7	4.3	—	13.0	—	4.3	—	—	—	—	17.4
ID	48.8	12.2	12.2	4.9	2.4	2.4	—	—	—	—	—	—	—	—	17.1
MT	50.0	12.5	12.5	—	—	—	—	—	—	—	—	12.5	—	—	12.5
NV	42.9	14.3	14.3	—	14.3	—	—	—	—	—	—	—	—	—	14.3
UT	55.6	11.1	11.1	11.1	—	—	—	—	—	—	—	—	—	—	11.1
WY	65.0	15.0	—	5.0	—	—	—	—	—	—	—	—	—	—	15.0
Northeast	55.4	9.2	6.7	5.3	2.0	1.6	0.6	1.6	1.1	0.2	0.2	0.2	0.3	0.2	15.7
CT	22.2	5.6	5.6	11.1	11.1	—	—	5.6	11.1	—	—	—	—	—	27.8
DE	57.1	9.5	4.8	4.8	—	—	—	—	—	—	—	—	—	—	23.8
MA	31.3	6.3	25.0	6.3	—	—	—	12.5	—	—	—	—	—	—	18.8
MD	40.0	11.4	8.6	11.4	2.9	—	2.9	8.6	—	—	—	—	—	—	14.3
ME	67.6	8.8	2.9	—	5.9	2.9	—	—	—	—	—	—	—	—	11.8
NH	33.3	—	—	—	—	—	—	—	—	—	33.3	—	—	—	33.3
NJ	50.0	5.8	9.6	7.7	3.8	—	1.9	1.9	3.8	—	—	—	1.9	—	13.5
NY	59.9	6.8	6.1	8.2	1.4	2.7	1.4	0.7	—	—	—	0.7	—	—	12.2
PA	60.0	10.2	6.2	2.2	1.1	1.5	—	0.7	0.7	0.4	—	—	0.4	0.4	16.4
RI	29.4	23.5	5.9	17.6	5.9	5.9	—	—	—	—	—	—	—	—	11.8
VT	53.8	11.5	3.8	3.8	—	—	—	—	3.8	—	—	—	—	—	23.1
Pacific	40.1	8.5	10.4	8.5	3.7	3.2	0.9	3.9	1.2	0.5	1.2	0.5	0.2	2.1	15.2
AK	80.0	—	—	—	—	—	—	—	6.7	—	—	—	—	6.7	6.7
CA	31.8	8.8	11.5	10.8	3.7	4.1	1.4	4.7	1.4	0.7	1.7	0.7	—	2.0	16.9
HI	47.4	10.5	—	—	—	—	—	—	—	—	—	—	—	5.3	36.8
OR	54.3	10.9	13.0	4.3	6.5	2.2	—	4.3	—	—	—	—	2.2	—	2.2
WA	58.6	6.9	8.6	5.2	3.4	1.7	—	1.7	—	—	—	—	—	1.7	12.1
Southcentral	53.7	9.7	6.5	7.4	1.4	1.9	—	0.9	0.5	—	0.9	0.5	0.5	1.4	14.8
AR	63.6	13.6	9.1	—	—	4.5	—	—	—	—	4.5	—	—	—	4.5
LA	36.4	29.5	4.5	15.9	—	2.3	—	2.3	—	—	2.3	2.3	—	—	4.5
NM	58.8	5.9	—	—	5.9	—	—	—	—	—	—	—	—	5.9	23.5
OK	47.4	—	5.3	—	5.3	—	—	5.3	—	—	—	—	—	—	36.8
TX	58.8	3.5	7.9	7.9	0.9	1.8	—	—	0.9	—	—	—	0.9	1.8	15.8
Southeast	47.3	9.3	9.0	5.8	3.4	2.6	0.5	1.6	0.4	0.4	1.3	—	—	0.9	17.6
AL	57.1	20.4	2.0	6.1	4.1	—	—	—	—	—	4.1	—	—	—	6.1
FL	46.8	9.0	9.7	5.6	3.4	2.9	0.2	1.4	0.5	0.5	1.1	—	—	0.7	18.2
GA	36.8	9.5	10.5	8.4	3.2	3.2	3.2	2.1	—	—	2.1	—	—	3.2	17.9
MS	53.6	7.1	7.1	7.1	3.6	3.6	—	3.6	—	—	—	—	—	—	14.3
SC	60.9	2.2	6.5	2.2	2.2	—	—	2.2	—	—	—	—	—	—	23.9
United States	50.5	9.1	8.2	6.2	2.9	2.0	0.8	2.0	0.7	0.3	0.8	0.3	0.1	0.9	15.3

Table 3. Employment and annual sales reported by survey respondents, and expanded sales and employment in the U.S. by state and region, 2008.

Region/ State	Permanent employment reported	Temporary employment reported	Total employment reported (permanent and temporary)	Annual sales reported (million\$)	Average number permanent employees per firm	Average number temporary employees per firm	Expanded sales (million\$)	Expanded employment (permanent & temporary jobs)	Average annual sales per firm (\$1000)
Appalachian	2,668	1,804	4,472	475.1	9.8	6.6	1,947.9	25,273	1,667
KY	72	95	167	17.3	3.8	5.0	147.1	2,095	617
NC	1,180	757	1,937	190.6	9.5	6.1	588.0	10,811	1,562
TN	675	486	1,161	111.1	7.7	5.5	543.9	6,573	1,248
VA	725	446	1,171	155.2	20.1	12.4	661.1	5,490	3,881
WV	16	20	36	0.9	2.7	3.3	7.8	304	155
Great Plains	121	664	785	63.2	3.2	17.5	247.8	2,966	1,405
KS	44	401	445	10.3	4.4	40.1	37.4	1,779	859
ND	19	46	65	1.1	3.2	7.7	1.9	239	187
NE	30	94	124	41.3	3.0	9.4	181.3	429	3,752
SD	28	123	151	10.5	2.3	10.3	27.1	519	658
Midwest	3,187	6,557	9,744	646.4	8.3	17.1	3,516.5	49,142	1,546
IA	86	194	280	35.3	3.6	8.1	217.2	1,793	1,413
IL	149	350	499	93.8	2.6	6.0	830.6	4,873	1,443
IN	181	443	624	67.0	7.5	18.5	239.5	3,089	2,791
MI	258	660	918	91.4	4.4	11.2	715.7	7,555	1,451
MN	905	1,522	2,427	105.9	23.2	39.0	308.7	8,594	2,407
MO	91	120	211	33.6	2.8	3.8	182.8	1,720	959
OH	1,274	2,422	3,696	186.4	10.4	19.7	859.7	14,239	1,456
WI	243	846	1,089	33.0	9.7	33.8	162.3	7,281	971
Mountain	801	923	1,724	122.2	9.1	10.5	436.0	8,181	1,273
AZ	153	30	183	13.4	25.5	5.0	67.6	769	2,683
CO	447	341	788	52.4	22.4	17.1	171.0	2,687	2,756
ID	111	299	410	14.0	3.8	10.3	66.8	2,352	411
MT	20	62	82	33.5	3.3	10.3	82.5	235	4,787
NV	25	29	54	3.5	4.2	4.8	6.1	240	584
UT	27	79	106	2.7	4.5	13.2	30.9	1,444	333
WY	18	83	101	2.8	1.2	5.5	11.1	454	165
Northeast	2,375	3,162	5,537	572.9	5.2	6.9	4,550.9	45,194	1,005
CT	169	278	447	40.5	11.3	18.5	377.9	3,824	3,113
DE	46	32	78	3.3	3.1	2.1	10.0	238	203
MA	128	162	290	20.0	11.6	14.7	90.4	1,195	1,540
MD	269	272	541	40.0	11.7	11.8	309.6	5,287	1,333
ME	56	115	171	10.5	2.3	4.8	74.0	1,722	351
NH	15	29	44	28.1	5.0	9.7	423.8	443	14,026
NJ	298	259	557	96.4	7.3	6.3	916.7	5,632	2,143
NY	395	722	1,117	98.9	3.9	7.1	927.7	10,686	767
PA	894	1,051	1,945	207.2	4.7	5.5	1,235.0	14,132	901
RI	68	143	211	12.3	5.2	11.0	44.5	876	821
VT	37	99	136	15.7	1.8	4.7	141.3	1,159	785
Pacific	8,147	3,177	11,324	1,112.6	22.7	8.8	8,353.0	59,564	3,023
AK	27	109	136	62.9	2.1	8.4	150.1	349	4,493
CA	6,782	2,112	8,894	840.8	27.2	8.5	6,681.8	43,318	3,418
HI	325	19	344	51.1	20.3	1.2	475.6	1,588	4,255
OR	741	727	1,468	81.7	19.0	18.6	480.6	9,960	1,816
WA	272	210	482	76.0	6.5	5.0	565.0	4,348	1,491
Southcentral	1,221	856	2,077	396.0	7.4	5.2	2,822.6	12,943	2,152
AR	105	209	314	36.0	5.8	11.6	96.9	986	1,714
LA	200	196	396	86.4	5.3	5.2	872.0	2,273	2,058
NM	124	76	200	53.4	8.9	5.4	405.2	1,271	4,106
OK	118	65	183	10.2	9.8	5.4	98.2	1,826	846
TX	674	310	984	210.1	8.1	3.7	1,350.4	6,587	2,188
Southeast	8,788	4,384	13,172	1,057.2	14.3	7.1	5,264.0	59,677	1,657
AL	137	150	287	58.5	3.5	3.8	432.2	2,500	1,272
FL	6,875	3,021	9,896	697.5	15.3	6.7	3,520.9	39,791	1,533
GA	1,508	901	2,409	267.6	19.1	11.4	1,013.5	11,387	3,431
MS	114	230	344	19.0	5.0	10.0	146.3	2,815	793
SC	154	82	236	14.5	5.7	3.0	151.1	3,184	415
United States	27,307	21,526	48,833	4,445.6	11.5	9.0	27,138.7	262,941	1,725

sales of more than \$50 million. Some 15 percent of survey respondents did not report annual sales. The Pacific region showed the highest percentage of firms in the over \$50 million category (2.1%), followed by the Southcentral (1.4%). The Great Plains region had the highest share of firms in the less than \$250,000 range (68.9%).

Employment reported and average employment per firm. A total of 48,833 employees were reported nationwide for all survey respondents in 2008, including 27,307 permanent employees and 21,526 temporary employees, as shown in Table 3. The Southeast and Pacific regions of the nursery industry had the highest employment reported, with 13,172 and 11,324 employees, respectively, lead by the dominant states of Florida and California. Among other regions, respondents in the Midwest reported 9,744 employees, followed by the Northeast (5,537), Appalachian (4,472), Southcentral (2,077), Mountain (1,724), and Great Plains (785). The average number of employees per nursery firm was 11.5 permanent and 9.0 temporary (Table 6). The state with the highest average number of permanent employees was California (27.2), followed by Arizona (25.5), Minnesota (23.2), Colorado (22.4), Hawaii (20.3), Virginia (20.1), Georgia (19.1) and Oregon (19.0). The states with the highest number of temporary employees per nursery were Kansas (40.1), Minnesota (39.0) and Wisconsin (33.8). The states with the lowest average number of permanent employees were Wyoming (1.2), Vermont (1.8), Alaska (2.1), Maine (2.3), South Dakota (2.3), Illinois (2.6) and West Virginia (2.7), and the lowest average number of temporary employees per nursery was found in Hawaii (1.2), Delaware (2.1) and South Carolina (3.0).

Annual sales reported and average sales per firm. Total sales in 2008 reported by all survey respondents in the U.S. amounted to \$4.45 billion (Table 3). The Pacific and the Southeast regions reported the highest annual sales of nursery products, \$1.11 billion and \$1.06 billion, respectively, lead by the states of California (\$841 million) and Florida (\$698 million). Among other regions, the Midwest reported annual sales of \$646 million, followed by the Northeast (\$573 million), Appalachian (\$475 million), Southcentral (\$396 million), Mountain (\$122 million), and Great Plains (\$63 million). The overall average sales reported per firm was \$1.72 million. Sales per firm was highest in the Pacific region (\$3.02 million), followed by the South central (\$2.15 million), while other regions of the U.S. had average sales per firm ranging from \$1.0 to \$1.67 million.

Expanded industry sales and employment. Total nursery and greenhouse industry sales and employment in the United States were estimated based on mail and internet survey information, telephone survey information, and *a priori* information on the distribution of firm sizes, as described in the methods section. The validated nursery industry population of *bona fide* active firms was estimated at 19,803 firms, or about 52 percent of the original survey population.

Total expanded industry sales in 2008 were estimated at \$27.14 billion, and total industry employment was estimated at 262,941 permanent and temporary jobs (Table 3). It is notable that the estimated sales are significantly larger than reported by USDA (\$16.99 billion), however, the estimated employment was considerably smaller (351,064 workers) than reported in the 2007 Census of Agriculture (6).

Expanded estimates of industry sales and employment in each state and region are presented in Table 3. The regions with the highest expanded sales were the Pacific (\$8.35 billion), Southeast (\$5.26 billion), Northeast (\$4.55 billion), Midwest (\$3.52 billion), and Southcentral (\$2.82 billion). Individual states with the highest sales were California (\$6.68 billion), Florida (\$3.52 billion), Texas (\$1.35 billion), Pennsylvania (\$1.24 billion), and Georgia (\$1.01 billion). In addition, several states had sales in excess of \$500 million: Illinois, Louisiana, Michigan, New Jersey, North Carolina, New York, Ohio, Tennessee, Virginia, and Washington. Regions with the highest expanded employment were the Southeast and Pacific, each with nearly 60,000 jobs, followed by the Midwest (49,142), Northeast (45,194), Appalachian (25,273) and Southcentral (12,943). Individual states with the highest employment were California (43,318 jobs), Florida (39,791), Ohio (14,239), Pennsylvania (14,132), Georgia (11,387), North Carolina (10,811), and New York (10,686). Other states with employment of at least 5,000 workers were Maryland, Michigan, Minnesota, New Jersey, Oregon, Tennessee, Texas, Virginia, and Wisconsin.

Plant types produced. The leading plant type produced by U.S. nurseries was deciduous and flowering trees representing 11.8 percent of total industry sales for all respondents (Table 4), followed by miscellaneous other plants (10.5%), flowering annual bedding plants (9.8%), flowering potted plants (7.0%) evergreen trees (7.0%), broad-leaved evergreen shrubs (6.4%), tropical foliage (6.1%), deciduous shrubs (5.7%), herbaceous perennials (5.3%), sod (5.3%), vegetable and herb bedding plants (4.1%), roses (3.6%), propagated materials (3.5%), narrow leaved evergreen shrubs (3.4%), vines and ground covers (3.0%), Christmas trees (2.7%), fruit trees (2.6%), and azaleas (2.2%). Deciduous and flowering trees were also produced by the highest percentage of respondents (37.5%), followed by evergreen trees (34.5%), deciduous shrubs (28.2%), and herbaceous perennials (26.2%). Native plants represented 13.4 percent of sales reported across all plant types (Table 4).

The highest percentage sales of deciduous trees for individual states were reported in Missouri (79.1%), Illinois (41.4%), Tennessee (32.9%) and South Carolina (30.9%), while the states with the highest portion of sales of flowering annual bedding plants were Montana (93.7%), Alaska (72.0%), and Kansas (65.1%). Vegetable and herb bedding plants constituted 68 percent of sales in Iowa. Evergreen trees accounted for 82 percent of sales in Arkansas and 42 percent of sales in Michigan. Tropical foliage represented 31 percent of sales in Florida. Azaleas represented 38 percent of sales in Louisiana. Fruit trees comprised 39 percent of sales in Tennessee. Turfgrass sod represented 87 percent of industry sales in Utah, 67 percent in Washington, and 66 percent in Nevada. Miscellaneous other plants constituted 98 percent of sales in Hawaii, 69 percent in Arizona, and 67 percent in Alabama.

Wholesale and retail sales outlets. Overall, 76.8 percent of sales went to wholesale outlets and 23.2 percent to retail outlets. There were 10 states with over 90 percent of sales at wholesale, and the highest were Oregon (98.9%), Alabama (93.3%), and Florida (93.0%). States with nearly all of their sales as retail included New Hampshire (99.9%), Montana

Table 4. Nursery plant types sold in the U.S. by state and region, 2008.

Region/ State	Deciduous shade and flowering trees	Deciduous shrubs	Broad-leaved evergreen shrubs (excluding azaleas)	Narrow-leaved evergreen shrubs	Evergreen trees	Azaleas	Vines and ground covers	Roses	Herbaceous perennials
<i>Percent of total sales in each region/state</i>									
Appalachian	13.5	4.2	10.8	6.4	3.7	2.5	1.4	2.9	4.5
KY	12.5	2.9	1.5	0.9	2.5	0.2	8.5	12.7	12.2
NC	5.7	2.0	15.8	12.0	4.0	3.6	0.4	1.6	2.4
TN	32.9	5.3	2.7	1.8	2.5	0.6	2.8	1.0	1.0
VA	9.7	6.4	11.4	3.5	4.2	2.8	1.0	4.8	8.5
WV	17.9	10.0	8.9	6.2	8.0	6.4	0.4	6.2	10.3
Great Plains	6.0	7.1	2.8	2.8	17.6	1.1	3.3	2.3	3.8
KS	0.8	0.5	0.1	0.1	0.3	0.2	2.7	2.9	8.9
ND	4.2	7.9	—	0.2	7.9	—	0.2	0.2	2.3
NE	6.4	9.5	4.2	4.3	8.0	1.7	4.3	2.6	2.8
SD	9.7	4.1	0.1	—	73.0	—	0.3	0.7	2.7
Midwest	20.2	12.0	3.0	4.1	10.1	1.0	1.4	2.4	11.8
IA	2.6	2.8	0.6	0.6	1.5	0.7	0.4	0.9	2.5
IL	41.4	18.8	0.2	0.3	8.8	—	0.1	0.1	3.0
IN	18.2	15.1	10.3	10.9	6.9	0.4	1.4	2.6	12.8
MI	6.6	7.3	1.0	1.1	41.8	1.2	1.8	2.7	3.4
MN	16.8	16.0	1.1	5.3	1.9	0.2	1.6	2.9	5.4
MO	79.1	2.1	0.5	0.1	3.6	0.2	0.4	0.3	1.8
OH	14.8	12.9	5.5	6.7	5.0	2.4	2.2	4.4	26.6
WI	1.0	1.2	0.1	0.2	1.6	—	0.3	0.1	19.0
Mountain	9.1	3.5	0.9	1.1	10.0	0.2	0.8	0.7	5.7
AZ	6.8	—	3.7	—	5.0	—	2.5	1.2	0.7
CO	15.8	5.7	0.8	2.7	14.8	0.5	0.5	0.5	11.9
ID	16.2	8.3	0.8	0.7	25.9	—	0.6	1.3	7.1
MT	—	—	—	—	—	—	0.6	0.4	0.1
NV	—	—	—	—	9.9	—	—	—	—
UT	0.5	0.9	—	—	2.1	—	—	—	1.4
WY	9.5	11.8	—	0.2	7.6	—	0.8	3.0	6.8
Northeast	9.6	8.2	10.3	4.1	11.6	1.4	1.1	3.4	6.7
CT	11.1	13.2	6.5	3.6	8.0	3.4	3.6	3.4	17.0
DE	16.9	6.7	13.8	19.2	12.4	2.7	0.1	7.7	5.8
MA	20.9	14.7	14.5	4.3	12.4	2.9	1.9	1.8	7.6
MD	12.6	5.6	8.7	7.9	12.7	1.9	0.4	2.9	10.3
ME	16.7	12.5	9.1	4.0	12.3	0.4	3.7	2.6	24.9
NH	5.0	5.0	5.0	2.0	3.0	1.0	1.0	3.0	10.0
NJ	12.4	16.2	34.6	2.6	4.8	0.8	0.5	5.4	1.4
NY	15.7	10.6	6.9	5.5	9.4	2.4	0.8	0.7	7.3
PA	4.4	3.1	3.2	2.6	17.9	0.5	1.0	4.5	3.3
RI	5.2	12.5	19.9	27.3	11.2	2.7	1.3	1.0	8.5
VT	3.0	1.8	1.4	1.4	2.1	1.0	0.3	0.5	22.7
Pacific	6.8	3.7	5.2	3.8	3.2	0.8	5.6	6.6	4.9
AK	1.8	1.8	—	0.8	0.8	—	—	1.0	12.7
CA	7.2	3.3	4.8	2.9	3.4	0.7	7.0	8.5	3.9
HI	—	—	0.1	—	—	—	—	—	—
OR	10.2	13.6	16.5	19.0	4.0	2.9	3.5	1.8	13.0
WA	7.1	1.5	4.4	1.2	4.9	0.5	1.6	0.2	3.6
Southcentral	7.0	2.6	5.5	1.7	9.4	10.2	2.3	2.7	3.5
AR	5.7	1.4	1.5	0.7	82.1	1.2	1.2	0.8	0.9
LA	4.0	1.1	13.1	1.7	1.7	38.3	1.8	0.6	0.5
NM	1.7	1.5	4.5	0.5	0.2	4.3	4.5	8.6	13.5
OK	23.3	6.7	19.9	6.7	7.2	5.6	5.6	0.7	3.6
TX	9.1	3.5	2.5	1.9	2.4	1.8	1.9	2.5	2.6
Southeast	14.5	4.4	6.5	1.8	6.1	1.9	3.4	2.4	2.0
AL	4.4	5.1	2.4	1.5	4.0	1.1	0.5	1.1	0.6
FL	12.1	5.2	5.4	0.9	5.0	2.0	4.0	2.8	1.7
GA	22.4	2.7	9.1	3.7	8.1	1.7	2.7	1.6	2.9
MS	9.5	1.1	18.0	4.8	7.2	6.0	2.3	4.3	2.2
SC	30.9	0.9	18.2	3.5	31.5	1.0	0.9	2.7	3.1
United States	11.8	5.7	6.4	3.4	7.0	2.2	3.0	3.6	5.3

Table 4 Continued...

Table 4. Continued

Region/ State	Bedding plants — flowering annuals	Bedding plants — vegetables, fruits, and herbs	Flowering potted plants	Christmas trees (live or cut)	Fruit trees	Tropical foliage	Turfgrass sod	Propagated material (liners, cuttings, plug, etc.)	Misc. other plants	Native plants*
<i>Percent of total sales in each region/state</i>										
Appalachian	13.6	2.1	5.6	1.2	9.3	0.3	14.7	0.3	2.9	8.2
KY	9.3	8.4	0.1	0.9	—	—	2.0	0.9	24.5	3.9
NC	7.6	0.7	6.3	1.6	0.1	0.5	34.8	—	0.8	5.1
TN	2.5	1.7	1.1	0.5	38.8	0.2	2.7	1.0	0.9	16.1
VA	29.0	3.4	8.5	1.1	1.3	0.1	—	—	4.3	6.9
WV	2.7	6.1	0.3	14.9	—	—	—	—	1.8	13.6
Great Plains	14.5	6.2	8.7	0.1	0.7	5.6	8.4	9.0	0.1	66.2
KS	65.1	10.5	7.6	—	—	—	0.1	0.1	—	0.4
ND	9.2	60.2	1.8	4.2	0.7	—	0.9	—	—	18.9
NE	4.4	4.7	11.3	—	1.0	8.5	12.7	13.6	—	80.2
SD	5.0	2.5	0.2	0.1	0.1	—	0.5	0.7	0.4	80.7
Midwest	11.0	6.4	2.9	5.9	3.9	0.8	0.7	0.9	1.3	9.6
IA	3.2	67.8	11.1	0.8	0.3	2.1	0.4	1.4	—	1.6
IL	0.1	0.1	0.1	26.2	—	—	0.1	0.1	0.5	9.0
IN	12.9	1.4	0.8	0.8	0.2	1.3	3.9	0.1	0.1	3.5
MI	8.9	3.4	2.8	4.7	11.7	1.0	0.3	0.1	0.1	18.4
MN	27.1	7.3	4.1	0.8	5.3	0.7	—	2.9	0.5	9.1
MO	4.0	0.2	1.8	0.8	—	1.0	3.8	0.3	0.1	21.8
OH	5.0	1.4	2.8	3.6	4.6	1.0	0.1	0.8	0.1	8.6
WI	40.1	7.8	4.5	0.7	0.2	—	0.2	1.5	21.4	3.4
Mountain	42.3	6.0	1.4	0.6	0.4	1.1	4.0	2.6	9.6	13.9
AZ	2.9	1.3	2.7	—	0.7	1.2	—	2.6	68.6	63.3
CO	28.8	7.7	1.8	—	0.6	2.3	—	4.2	1.5	8.4
ID	16.9	9.6	1.6	4.1	0.6	—	1.0	5.2	—	27.3
MT	93.7	5.1	—	—	—	—	—	—	—	0.4
NV	—	—	5.7	—	0.1	—	65.7	—	18.6	—
UT	1.3	0.7	0.9	1.1	0.1	—	87.3	2.1	1.5	4.6
WY	36.0	7.4	0.2	4.0	1.3	1.9	0.2	—	9.4	2.5
Northeast	8.8	5.4	12.7	6.9	0.6	1.2	0.5	4.4	2.8	15.9
CT	6.0	3.2	6.7	0.9	0.1	0.9	1.2	0.6	10.7	8.2
DE	3.5	1.1	7.2	1.8	—	0.3	—	0.7	—	4.3
MA	5.3	1.7	7.6	1.6	1.4	0.5	0.4	—	0.5	19.0
MD	8.5	1.0	3.1	0.7	0.1	0.5	—	18.4	4.6	20.0
ME	2.8	1.5	0.4	3.1	0.6	0.3	—	1.5	3.6	21.2
NH	10.0	10.0	10.0	10.1	5.0	20.0	—	—	—	0.2
NJ	7.2	0.4	5.9	0.6	0.1	—	0.3	5.3	1.5	16.6
NY	14.7	3.3	8.6	3.4	1.0	0.2	1.8	0.3	7.6	38.0
PA	5.2	9.4	23.4	14.7	0.2	—	0.2	5.9	0.2	8.5
RI	3.9	2.3	2.5	0.9	—	0.3	—	0.2	0.4	16.7
VT	45.6	12.3	3.6	2.5	1.5	0.4	—	—	—	2.6
Pacific	7.0	1.6	11.1	2.1	1.5	2.6	8.9	5.0	19.5	11.1
AK	72.0	3.6	1.6	0.8	—	—	—	2.9	—	3.8
CA	3.3	1.7	14.8	1.6	2.0	3.4	5.6	6.2	19.6	12.6
HI	—	—	0.1	—	—	1.3	—	0.1	98.3	0.3
OR	0.3	0.2	—	11.6	0.2	—	—	2.2	1.2	14.4
WA	3.4	1.2	0.4	0.4	0.1	0.1	66.6	1.6	1.2	3.6
Southcentral	5.7	16.7	1.7	3.2	1.8	2.5	0.6	0.4	22.5	15.0
AR	1.4	0.6	0.1	0.1	1.1	0.4	0.1	0.1	0.5	11.1
LA	3.2	0.8	0.5	—	0.5	1.0	2.0	—	29.1	2.1
NM	17.6	17.2	0.1	17.0	4.3	4.3	0.2	—	0.1	4.9
OK	11.0	1.5	0.7	—	0.9	—	4.9	0.5	1.4	11.2
TX	4.1	27.0	2.8	1.6	1.9	3.1	0.1	0.7	30.5	23.8
Southeast	8.4	0.4	5.5	0.1	1.5	20.3	4.5	5.6	10.7	15.5
AL	3.1	0.8	3.3	0.5	0.8	1.0	1.7	1.2	66.8	12.1
FL	3.2	0.3	7.8	—	1.7	30.9	0.5	6.6	10.1	19.4
GA	21.6	0.4	0.7	—	1.1	0.2	15.4	4.5	1.3	6.4
MS	28.5	4.8	3.5	1.3	4.5	1.6	0.4	0.1	0.1	14.8
SC	1.6	2.3	0.7	—	0.1	0.1	—	0.4	2.2	9.1
United States	9.8	4.1	7.0	2.7	2.6	6.1	5.3	3.5	10.5	13.4

*Native plants independent of other plant types.

Table 5. Market channel sales of nursery products in the U.S. by state and region, 2008

Region/ State	Mass merchandisers	Home centers	Single location garden centers	Multiple location garden centers	Landscape firms	Re-wholesalers	Other type(s)
<i>Percent of total sales in each region/state</i>							
Appalachian	4.2	9.3	17.2	5.1	41.3	21.1	1.7
KY	8.2	0.4	2.2	0.4	77.1	10.9	0.9
NC	2.6	6.7	4.8	5.3	70.2	10.3	—
TN	2.4	3.6	8.7	5.3	21.5	57.8	0.8
VA	6.9	16.8	38.5	5.2	17.2	11.2	4.3
WV	—	0.6	4.0	—	56.9	38.5	—
Great Plains	11.1	0.5	17.3	1.9	10.7	2.0	56.5
KS	70.1	1.3	10.1	4.7	13.2	0.7	—
ND	—	—	25.8	—	68.4	5.8	—
NE	—	0.5	3.5	1.8	8.1	0.9	85.3
SD	—	—	80.3	—	12.5	7.2	—
Midwest	12.5	7.3	24.5	4.9	34.8	14.8	1.1
IA	30.3	32.6	8.0	—	11.9	8.0	9.2
IL	—	0.3	38.3	0.7	49.0	11.7	—
IN	5.7	6.9	8.9	0.3	72.5	5.7	0.1
MI	0.8	7.6	41.5	2.8	31.6	15.8	—
MN	29.2	1.7	30.4	8.4	17.6	12.7	—
MO	—	—	2.5	—	94.6	2.8	0.2
OH	5.0	14.4	20.9	12.9	17.5	27.1	2.2
WI	55.9	1.5	8.8	4.3	1.5	26.8	1.2
Mountain	2.2	2.4	40.7	1.0	46.0	7.4	0.1
AZ	—	3.2	4.1	—	79.4	13.2	—
CO	1.9	2.7	20.0	1.4	66.4	7.5	—
ID	8.4	7.4	34.5	3.3	25.3	20.0	1.2
MT	—	—	99.9	—	0.1	—	—
NV	6.6	3.3	8.0	—	71.3	10.8	—
UT	2.4	1.4	2.2	—	92.5	1.1	0.5
WY	8.8	—	14.9	—	74.1	2.2	—
Northeast	1.6	0.4	23.2	7.7	42.8	22.4	1.9
CT	—	—	14.7	1.4	80.5	3.4	—
DE	—	—	13.9	—	68.7	17.4	—
MA	—	—	2.7	2.4	82.7	12.2	—
MD	0.2	0.2	30.6	1.5	40.4	27.1	—
ME	0.9	—	8.8	0.2	82.9	7.1	0.2
NH	—	—	75.0	—	25.0	—	—
NJ	1.4	0.1	21.6	11.7	33.7	27.9	3.6
NY	4.7	0.9	11.1	2.3	64.8	11.5	4.7
PA	0.4	0.5	36.4	13.6	16.4	32.4	0.3
RI	1.1	—	28.9	8.6	43.5	17.8	—
VT	12.1	2.9	39.7	6.0	38.6	0.7	—
Pacific	13.7	6.8	23.7	16.0	17.2	21.7	0.8
AK	—	—	10.1	74.4	14.9	0.6	—
CA	19.1	6.2	20.1	11.8	16.6	25.0	1.2
HI	0.1	—	49.3	19.6	9.9	21.2	—
OR	0.2	7.3	46.1	12.5	10.3	23.6	—
WA	0.5	20.7	21.6	14.5	36.3	6.2	0.2
Southcentral	18.7	7.8	36.8	9.6	14.0	13.1	—
AR	3.0	1.1	86.4	1.0	4.7	3.8	—
LA	8.8	1.8	11.0	31.3	11.0	36.1	—
NM	47.1	0.2	20.3	0.2	29.8	2.4	0.1
OK	0.8	—	3.7	—	94.5	0.9	—
TX	18.8	13.6	44.7	5.2	8.9	8.7	0.1
Southeast	6.2	11.3	12.6	2.4	37.3	29.8	0.4
AL	9.4	9.5	15.5	0.1	14.5	51.0	—
FL	7.5	12.1	11.7	2.8	31.4	34.0	0.5
GA	1.6	10.6	14.3	2.0	59.2	12.3	—
MS	4.2	2.4	23.0	2.3	43.4	20.4	4.4
SC	—	0.1	2.2	0.3	76.9	20.5	—
United States	9.3	7.5	21.9	7.5	30.8	21.3	1.8

Table 6. Interregional trade in nursery products by U.S. states and regions, 2008.

Selling region/ State	Purchasing region								
	Appalachian	Great Plains	Midwest	Mountain	Northeast	Pacific	Southcentral	Southeast	Foreign
<i>Percentage of total sales in each state or region</i>									
Appalachian	75.7	0.4	2.9	1.2	11.9	0.1	4.2	3.4	0.2
KY	80.8	—	19.2	—	—	—	—	—	—
NC	86.2	—	0.5	1.7	4.9	0.2	0.1	6.4	—
TN	71.5	1.4	3.5	—	4.7	—	13.9	4.4	0.7
VA	67.8	—	1.8	2.1	28.2	—	—	—	—
WV	83.4	—	1.1	—	15.5	—	—	—	—
Great Plains	1.1	89.2	7.6	—	—	—	2.0	0.1	—
KS	—	59.5	28.5	—	—	—	11.9	—	—
ND	59.4	34.7	2.8	—	—	—	—	3.1	—
NE	—	96.8	3.2	—	—	—	—	—	—
SD	—	96.4	3.6	—	—	—	—	—	—
Midwest	0.4	1.7	94.4	0.6	2.6	—	—	0.3	—
IA	—	17.6	82.0	—	0.5	—	—	—	—
IL	—	0.9	98.7	0.4	—	—	—	—	—
IN	1.3	—	96.5	—	—	—	—	2.2	—
MI	0.9	—	99.1	—	—	—	—	—	—
MN	—	2.6	97.3	—	—	—	—	—	—
MO	—	0.4	99.6	—	—	—	—	—	—
OH	0.5	—	85.7	2.3	11.5	—	—	—	—
WI	—	11.1	86.8	—	1.7	0.3	—	0.1	—
Mountain	—	0.7	0.1	87.1	0.5	1.1	10.34	—	0.2
AZ	—	—	—	67.2	—	6.0	26.7	0.1	—
CO	—	1.4	0.2	80.6	—	—	17.8	—	—
ID	—	—	0.3	93.0	—	5.0	—	—	1.7
MT	—	—	—	100.0	—	—	—	—	—
NV	—	—	—	87.5	9.9	0.5	2.1	—	—
UT	—	—	—	99.1	—	0.9	—	—	—
WY	—	1.9	—	98.0	0.2	—	—	—	—
Northeast	0.7	—	4.2	—	94.5	—	0.2	0.2	0.2
CT	—	—	—	86.4	13.6	—	—	—	—
DE	—	—	—	—	100.0	—	—	—	—
MA	—	—	—	3.3	96.7	—	—	—	—
MD	6.3	—	—	2.0	91.6	0.1	—	—	—
ME	—	—	—	3.2	96.8	—	—	—	—
NH	—	—	—	—	100.0	—	—	—	—
NJ	0.2	—	10.8	1.0	88.0	—	—	—	—
NY	0.8	—	2.9	3.2	91.3	—	0.9	0.8	0.2
PA	—	—	4.4	5.6	89.4	—	—	0.1	0.5
RI	—	—	5.5	9.0	85.4	—	—	—	—
VT	—	—	0.1	7.1	92.9	—	—	—	—
Pacific	1.1	0.3	2.1	3.6	1.5	88.8	1.4	0.6	0.5
AK	—	—	0.3	—	0.3	98.6	—	0.7	—
CA	1.0	0.3	0.6	2.8	1.5	91.8	1.5	0.4	0.2
HI	—	—	4.9	0.6	0.5	90.9	1.4	1.7	—
OR	3.1	—	21.5	11.4	3.1	52.0	1.5	2.9	4.7
WA	0.1	0.6	0.1	6.9	—	92.0	—	0.1	0.2
Southcentral	0.6	0.2	2.8	0.4	0.1	4.5	87.9	3.5	—
AR	—	1.6	1.8	—	0.2	—	94.9	1.5	—
LA	2.0	—	0.3	—	—	0.1	92.6	5.1	—
NM	—	—	—	1.7	—	—	98.2	—	—
OK	—	0.3	—	—	—	—	99.7	—	—
TX	0.1	—	6.7	0.1	0.2	11.8	76.2	4.9	—
Southeast	14.5	0.2	2.4	3.4	2.9	0.8	2.3	73.1	0.4
AL	52.1	—	1.4	—	0.3	—	1.2	45.1	—
FL	12.5	0.1	3.4	5.0	3.5	1.2	2.7	71.1	0.5
GA	11.7	0.4	0.4	—	0.8	—	0.6	86.1	—
MS	12.9	—	1.0	—	4.0	—	11.2	70.9	—
SC	29.9	0.1	0.4	—	15.4	—	—	54.1	—
United States	11.4	2.1	17.9	6.2	16.2	18.6	9.8	17.5	0.2

(99.3%), Idaho (99.3%), Vermont (95.3%), Wyoming (93.8%), and New Mexico (85.3%).

Market 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 landscape firms with 30.8 percent of sales nationally, followed by single location retail garden centers (21.9%), and re-wholesalers (21.3%), then mass merchandisers (9.3%), home centers (7.5%) and multiple location garden centers (7.5%).

Results for market channel sales for individual states and regions are shown in Table 5. Landscape market sales were highest in Missouri (94.6%), Oklahoma (94.5%), Utah (92.5%), Maine (82.9%), Massachusetts (82.7%) and Connecticut (80.5%). Sales to single location garden centers were highest in Montana (99.9%), Arkansas (86.4%), and South Dakota (80.3%). Sales to multiple location garden centers were highest in Alaska (74.4%) and Louisiana (31.3%). Sales to re-wholesalers were highest in Tennessee (57.8%) and Alabama (51.0%). Sales to mass merchandisers were highest in Kansas (70.1%), Wisconsin (55.9%) and New Mexico (47.1%), and sales to home centers were highest in Iowa (32.6%).

Interregional trade of nursery products. The interregional trade of nursery products was also one of the surveyed subjects. The flow of products sold from regions and states to other regions is shown in Table 6. The home state of the nursery was listed as the first option for a destination state since this was the dominant practice of all states in previous surveys. In most cases, the weighted percentages of sales to buyers within the nursery's home state were by far the largest. The states with the largest share of products sold to their own home region were Montana (100%), Oklahoma (99.3%), Utah (98.5%), Missouri (98.2%), New Mexico (97.3%), Nebraska (96.7%), Indiana (93.8%), Arkansas (93.6%), Michigan (93.2%), and Wyoming (92.8). The state of Hawaii sold more products to buyers in California (47.5%) than buyers in Hawaii. Interregional trade of nursery products from the states in a region to the same region dominated the trade flows, from 73 percent in the Southeast to more than 95 percent in the Northeast. A few individual states had a high share of sales outside their region, including North Dakota (59.4%) and Alabama (52.1%).

This study is the fifth nationwide data collection effort of the Green Industry Research Consortium of university horticulturists and economists. The study provides nursery industry managers with information to help identify and

quantify the extent of various on-going structural adjustments, give insight regarding future adjustments anticipated in this dynamic industry. Results from this project will provide valuable input into the decision-making activity of nursery professionals regarding future expansion plans, the selection of which plants to grow and in what quantity, the determination of which production method to use, and the appropriate outlets to target for their output.

Obviously, there are several issues that stand to influence the green industry dramatically over the next several years (e.g. immigration, water, ecosystems management, economic and financial crisis, health care reform, etc.). One of the most valuable tools in addressing these issues and presenting the industry's standpoint is the economic impact that the green industry represents in the U.S. and world economy. The information regarding the number of jobs and industry sales has played a significant role in the development of key pieces of legislation that have positively impacted the green industry, and has been invaluable in countering potentially negative legislation.

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