Information Sources Used by Garden Writers

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SUMMARY. Results of a national survey indicated that the top four sources of information used by garden writers for new or appropriate plants were nursery catalogs, botanical and public gardens, seed company catalogs, and gardening magazines. More than 50% of the participating garden writers reportedly used these four sources a lot. The most frequently used books and magazines were *Horticulture Magazine* (34.6%), *Manual of Woody Landscape Plants* (24.1%), and *Fine Gardening* (23.7%). About 29% of the garden writers used the World Wide Web to source information and the two most widely used type of sites were universities and botanical gardens and arboreta. A high percentage of garden writers desire greater or more frequent communications with botanical gardens and arboreta (90.4%), university personnel (87.4%), and plant producers (86.3%).

Garden writers play an important role in the education of the gardening public (Garber and Bondari, 1998). They are a primary conveyor of information generated by university personnel, botanical gardens, and commercial nurseries and gardening firms. Their information is widely distributed through newspaper, magazine, and television to the American gardening population (Garber and Bondari, 1998). In this role, garden writers have a major influence on the public view of appropriate gardening practices, plant varieties, and

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Table 1. Garden writers' use of information sources for new or appropriate plants.

Information source	Frequency[z] (% response)				χ^2	Score[y]
	Don't use	Use a little	Use some	Use a lot		
Nursery catalogs	1.6	9.9	26.0	62.5	**	7.6 ± 0.10
Botanical and public gardens	2.8	12.5	28.5	56.2	**	7.2 ± 0.11
Seed company catalogs	3.4	16.0	25.4	55.2	**	7.1 ± 0.12
Gardening magazines	1.6	13.5	30.7	54.1	**	7.1 ± 0.11
Literature supplied by plant producers	4.5	22.3	38.5	34.7	**	6.0 ± 0.11
Seed company communications	8.0	25.2	31.3	35.5	**	5.8 ± 0.13
Direct contact with university personnel	11.7	25.1	26.3	37.0	**	5.7 ± 0.13
Direct contact with plant producers	11.2	24.1	30.8	33.9	**	5.7 ± 0.13
University publications	11.2	27.5	29.7	31.6	**	5.5 ± 0.13
Producer related trade journals	12.8	25.7	31.8	29.8	**	5.4 ± 0.13
Material from other garden writers	10.7	26.8	35.0	27.5	**	5.4 ± 0.12
Press releases from seed companies and growers	10.2	30.3	35.5	24.1	**	5.2 ± 0.12
Trade shows sponsored by plant producers	22.2	27.2	30.3	20.3	**	4.6 ± 0.13
Newsletter from a horticultural commodity group	20.7	32.7	28.8	17.8	**	4.4 ± 0.12
Landscape designers or their landscapes	20.2	38.3	22.6	18.9	**	4.3 ± 0.13
Direct contact with landscape installers	25.0	34.1	23.6	17.4	**	4.1 ± 0.13
Landscape architects or landscapes they design	25.9	39.4	21.4	13.3	**	3.8 ± 0.12

[z]Combined response for use a little = 2, 3, 4; use some = 5, 6, 7; use a lot = 8, 9, 10.
[y]Score for frequency of use on a 1 to 10 scale; ±SE.
**Significant at $P = 0.01$; chi-square with 3 df.

materials used in home gardening.

Professionals interested in enhancing gardening by the general public should develop meaningful programs of support and interaction with garden writers. For instance, university personnel generate substantial information that could be of benefit to the gardening public. However limited resources (Garber, 1992) make it increasingly difficult to disseminate information to numerous, diverse clientele groups. A closer working relationship with garden writers and targeted information transfer could result in a great multiplier effect, i.e., information transfer to a few garden writers could result in thousands of consumers exposed to the new information. The commercial plant producers should also be interested in the information disseminated by garden writers since their communications can influence consumer purchasing decisions. In both of these examples an important starting point for an enhanced communication program is a good understanding of current information used by garden writers (Boone and Krutz, 1986).

We found no published information that would give specific guidance on the information sources most widely used by garden writers. This study was conducted to provide quantitative data on the most widely used sources of information regarding plant material and the opportunities for increased communications between garden writers and groups with gardening interests.

Materials and methods

The survey instrument was mailed to garden writers in the United States who were members of the Garden Writers Association of America (GWAA). The survey contained a cover letter cosigned by the senior author and the executive director of the GWAA explaining the goal of the survey. In total, 1359 surveys were mailed in February 1997, with a follow-up mailing to nonrespondents in March 1997. In total, 691 surveys were returned for a 50.8% response rate. Completed surveys totaled 514, with 177 marked "NA", indicating inactive garden writer or not appropriate.

Data were analyzed and an analysis of response conducted using PROC FREQ and PROC GLM of SAS (SAS Institute, 1989). Chi-square analysis was conducted to compare observed and expected frequencies for various classes of response. Garden writers were asked to a) indicate the frequency of use of 17 sources of information regarding new or appropriate plants, b) list the books and journals or magazines that are most valuable sources of information about plants in an open-end question, c) indicate the value of different sites on the World Wide Web (Web) in providing information on plants, and d) identify groups with which garden writers seek increased communications.

Results and discussion

Garden writers were asked to rate their frequency of use, for each information source, on a scale of 1 to 10. The frequency of use of 17 sources of information on new or appropriate plants varied substantially (Table 1). The average score ranged from 7.6 (low end of "use a lot") for the most frequently used source, nursery catalogs, to 3.8 (high end of "use a little") for the least frequently used sources, landscape architects or landscapes they design (Table 1).

The four most frequently used sources of information (Table 1) that were "used a lot (rated 8, 9, 10)" by >50% of the respondents were nursery catalogs, botanical and public gardens, seed company catalogs, and gardening magazines. The fifth highest rated source of information was ≈20% points less than the fourth rated source. There were five sources of information (ranked 5 through 9) where the frequency for "use a lot" was ≈30%. The 10th to 13th rated information sources had a frequency of use for "use a lot" category of ≈20% to 30% (Table 1). Three of the four lowest rated sources were the only three segments of the landscape industry listed. Apparently, garden writers do not rely very much on the landscape industry for plant material information. The chi-square test results showed that response frequencies for the four categories of response (don't use, use a little, use some and use a lot) differed significantly ($p = 0.01$) for all 17 sources of information (Table 1).

The information sources rated by garden writers (Table 1) could be divided into three groups: a) the top four

Table 2. Books most frequently used by garden writers for plant information.

Book[z]	Response No.	Response %[y]
Manual of Woody Landscape Plants (Dirr, 1998)	124	24.1
Sunset Books	78	15.2
Hortus Third (Liberty Hyde Bailey Hortorium, 1976)	74	14.4
Herbaceous Perennial Plants (A. Armitage, 1989) and *Specialty Cut Flowers* (A. Armitage, 1993)	35	6.8
Wyman's Gardening Encyclopedia (Wyman, 986)	33	6.4
Royal Horticulture Society Books	31	6.0
Easy Care Native Plants (Taylor, 1996)	28	5.4
Manual of Herbaceous Ornamental Plants (Still, 1994)	25	4.9

[z]Total of 288 books identified, the top 8 are listed.
[y]Based on 514 respondents, total exceeds 100% since respondents could identify up to 3 books.

Table 3. Journal or magazine most frequently used by garden writers for plant information.

Journal or magazine[z]	Response No.	Response %[y]
Horticulture Magazine	178	34.6
Fine Gardening	122	23.7
Organic Gardening	71	13.8
American Nurseryman	68	13.2
Garden Design	41	8.0
American Gardener	31	6.0
Avant Gardener	30	5.8
National Gardening	29	5.6
Sunset Magazine	26	5.1
Hort Ideas	25	4.9

[z]Total of 196 journals or magazines identified, the top 10 are listed.
[y]Based on 514 respondents, total exceeds 100% since respondents could identify up to 3 journals or magazines.

sources (consisting of magazines, catalogs and botanical gardens) where >50% of garden writers "use a lot", b) the bottom five sources (consisting of the three segments of the landscape industry, producer trade shows and commodity newsletters) where >80% of the respondents did not use these sources, and c) eight varied sources of information with intermediate frequency of use where the average score was between 5.2 and 6.0 and 24% to 37% of respondents indicated "used a lot".

Garden writers were asked to list up to three of the most frequently used books and journals or magazines for information about plants in an open-end question. A total of 288 books were identified by respondents and the top 8 are listed in Table 2. The most popular book, *Manual of Woody Landscape Plants* (Dirr, 1998), was used by 24.1% of the respondents. The *Manual of Woody Landscape Plants* appears to be one of the most valued reference texts in the landscape and gardening industry. In addition to its top rating by garden writers, it was rated highest by landscape installers (Garber et al., 1995) and second highest by landscape architects (Garber and Bondari, 1992).

The respondents did not provide specific titles for the Sunset books and Royal Horticulture Society books but listed two titles for author Alan Armitage, *Herbaceous Perennial Plants* (1989) and *Specialty Cut Flowers* (1993). Sunset books and *Hortus Third* (Liberty Hyde Bailey Hortorium, 1976) were the second and third most popular books identified by garden writers.

Respondents identified 196 journals or magazines that were used as sources of information about plants (Table 3). With the large number of magazines (196) identified by respondents as being important sources of plant material information, the response for *Horticulture Magazine*, and *Fine Gardening* is exceptional. The publications, *Horticulture Magazine* and *American Nurseryman* were also among the journals most widely used by landscape architects (Garber and Bondari, 1992). These widely used magazines could be an important mechanism to convey plant material information to garden writers.

About 29% of garden writers indicated that they source material on the Web. This level of participation is probably influenced by the recent advent of computer technology and will probably increase over time. The 147 respondents who used the Web were asked to assess the value of six types of Web sites (Table 4). Two sites, universities and botanical gardens and arboreta, were rated as "high value" by >50% of the respondents. Gardening publications were rated "high value" by 43.4% of respondents. The relative ratings for the six Web sites are probably consistent with the amount of time and priority placed on this method of information transfer by each group. University personnel and arboreta were generally putting information on the Web before nursery and greenhouse producers. The

Table 4. World Wide Web sites used by garden writers.

Web site	Value[z] (% response) Low	Medium	High	χ^2	Score[y]
Universities	5.8	30.4	63.8	**	3.8 ± 0.08
Botanical gardens and arboreta	8.0	35.5	56.5	**	3.6 ± 0.08
Gardening publications	10.3	46.3	43.4	**	3.5 ± 0.08
Nursery and greenhouse producers	23.8	49.2	27.0	**	3.0 ± 0.09
Producer trade associations	39.5	41.9	18.5	**	2.7 ± 0.09
Hardgood suppliers	39.1	47.7	13.3	**	2.7 ± 0.07

[z]Percent response for low =not available +no value, medium = somewhat valuable, and high = valuable + very valuable.
[y]Mean score for 1 = not available, 2 = no value, 3 = somewhat valuable, 4 = valuable, 5 = very valuable; ± SE
[**]Significant at $P = 0.01$; chi-square with 2 df.

Table 5. relative benefit of increased communications for with industry groups as identified by garden writers.

Industry group	Response type (% response) Yes	No	χ^2
Arboreta and botanical gardens	90.4	9.6	**
University personnel	87.4	12.6	**
Plant producers	86.3	13.7	**
Other garden writers	81.5	18.5	**
Seed companies	70.1	29.9	**
Landscape architects	45.0	55.0	**
Landscape installers	40.3	59.7	**
Landscape maintenance company	39.3	60.7	**
Chemical companies	34.1	65.9	**

**Significant at $P = 0.01$; chi-square with 1 df.

chi-square statistic tests also showed that response frequencies for the low, medium, and high categories were not in the 1:1:1 ratios.

Garden writers were asked to identify, from a list of industry segments (Table 5), which groups they felt could benefit their profession with increased communications. The four industry groups where >80% of garden writers felt that increased communications would be of benefit, were arboreta and botanical gardens, university personnel, plant producers, and other garden writers. The four groups where <50% of garden writers were interested in increased communications were landscape architects, landscape installers, landscape maintenance companies, and chemical companies. Three of the four lowest rated sources were in the landscape trade. In an earlier question, garden writers indicated that they use groups in the landscape trade relatively little for information on plants.

Implications for university personnel

The results in this study demonstrate that garden writers are making extensive use of university publications and direct contact with university personnel (Table 1) relative to information about plants. Only ≈11% to 12% of garden writers do not directly use university resources for information regarding plants while about one-third of the respondents indicated "use a lot" for university generated information. This relatively high frequency of use placed university resources at about the median among all sources of information included in the survey. The results also suggests that there is substantial room to increase the use of university information since the top rated source (nursery catalogs) was rated "use a lot" by 62.5% of the respondents. In fact, 87.4% of the respondents indicated that increased communications with university personnel would be beneficial (Tables 5). This was the second highest rating among the nine groups identified. Garden writers who use the Web place a very high value on university Web pages as a source of information (Table 4). University Web pages were related as high value by 63.8% of respondents, the highest among the six sources of Web pages. Perhaps university personnel could further increase the use of their information by garden writers through direct communications. This might be in the form of a mailing to garden writers in a given region of the country and supplying them information concerning your university Web address and a summary of available publications, as well as a list of printed publications with ordering instructions. Including this information on the Web site and conducting workshops could be very useful for garden writers. Garden writers are an influential group of educators and university personnel should be proactive in ensuring that they have the best available information to communicate to the public.

Implications for industry personnel

Garden writers, through their gardening communications, are an important influencer group in the lawn and garden industry. Landscapers, plant producers, hardgoods suppliers and retailers should develop a working relationship with garden writers in their market. Retailers could supply information to garden writers on appropriate plants and other garden products and coordinate this communication program with their inventory and advertisements. Retailers should also consider developing their own credibility as garden writers and enhancing their perception as plant experts by the gardening public. Growers could use the information in this paper to help develop a marketing communications program for garden writers. The survey confirmed the desire by garden writers for greater communication with plant producers. Garden writers are using the WWW to retrieve plant information. Growers could develop informational Web pages and communicate the Web page address to garden writers. Communication with garden writers is one avenue for plant producers to influence consumer demand.

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