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Talking About the Bees

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Increasingly, the media seem to portray the public as being highly concerned about the effects of neonicotinoids on pollinator health. With more regulations and mandates on labeling from national retailers, greenhouse growers are looking for alternative pest management practices. As some retailers are increasing the information available to consumers about pest management during plant production (via labeling, signage, etc.), consumers will have another attribute to evaluate when making a purchasing decision. When they see a label stating the plant was produced in a "bee-friendly" manner or "by using neonicotinoid insecticides," will the consumer understand it? How will they interpret our labels?

In an effort to better understand how consumers perceive pest control methods, we conducted a nationwide online survey. In this study, we wanted to understand consumer perceptions about "neonicotinoid-free," "bee-friendly," "traditional" or "biological control" pest management practices. We conducted an Internet survey in May 2014 by collecting attitudes about those terms in multiple-choice (single and multiple answer), free-form text entry and rating question types. We had a total of 3,082 participants from throughout the U.S. respond to our survey.

Confusion About Pest Management Practices

We asked participants to describe what the terms "bee-friendly," "neonicotinoid-free," "grown with beneficial insects" and "traditional insect management" meant to them in terms of producing ornamental flowering plants in free-form questions. From those descriptions, we categorized their answers based on common responses. In order to present those responses, we developed word clouds that show the most common answers from respondents for "bee-friendly," "neonicotinoid-free," "grown with beneficial insects" and "traditional pest management". The larger the word in the word cloud, the more predominant it was among participants' answers.

Over a third (34.9%) believed that "bee-friendly" meant the pest management was not harmful to bees, while 18.8% believed that it indicated plants that were attractive to bees. Seventeen percent of participants felt that "bee-friendly" meant bees were able to pollinate these plants. In order to better gauge their understanding of "bee-friendly" practices, we also asked the participants to check all of the attributes in multiple-choice questions that they would associate with bee-friendly production practices (Table 1). Approximately two-thirds said bees were not harmed during "bee-friendly" plant production, while about half of respondents considered these characteristics to be "bee-friendly": "better for the environment," "environmentally friendly" or "use of

products without bee toxicity." Notice that a quarter of respondents incorrectly thought that "bee-friendly" meant that the plants were grown without any insecticide/pesticide or any synthetic pesticides.

Characteristic	Number of consumers (%) Total
Bees are not harmed	2058 (66.8%)
Better for the environment	1508 (48.9%)
Environmentally friendly	1460 (47.4%)
Use of products without bee toxicity	1420 (46.1%)
Safer for humans	1158 (37.6%)
Use of natural products	1061 (34.4)
Pesticides are not used	998 (32.4%)
Insecticides are not used	882 (28.6%)
Less pesticide residue on products	832 (27%)
Use of natural pesticides	783 (25.4%)
No synthetic pesticide use	625 (20.3%)
I do not know what bee-friendly production is	553 (17.9%)
Higher price	433 (14%)
Use of biopesticides	370 (12%)
Expensive	240 (7.8%)
Plants not attractive to bees	125 (4.1)
Some other characteristic not listed	95 (3.1%)
Marketing gimmick	92 (3%)
Pesticides are used	91 (3%)

Table 1.
Percentage of consumers indicating the characteristics of bee-friendly plant production.

Forty percent of people identified "grown with beneficial insects" as being "good insects eating bad insects," followed by 25% writing "I don't know". The label that generated the most confusion was the term "neonicotinoid-free."

When participants manually wrote its meaning, 56.6% of all participants reported that they did not understand ("I don't know") the term "neonicotinoid-free" and 10.5% believed that "neonicotinoid-free" plants were not treated with any insecticide. Even more consumers indicated their confusion on "neonicotinoid-free" when asked to rate their knowledge of neonicotinoid-free production on a scale of 1 to 6. Sixty-nine percent considered themselves not at all knowledgeable or marked that they have never heard of it.

Approximately half (49%) of people wrote that traditional insect control meant that pesticides were used in plant production (Table 2). A quarter of respondents answered that they did not know what was considered traditional insect management. Therefore, of all of the labels, bee-friendly was the most understood and, therefore, is the most promising marketing strategy for those desiring to advertise alternative pest management practices.

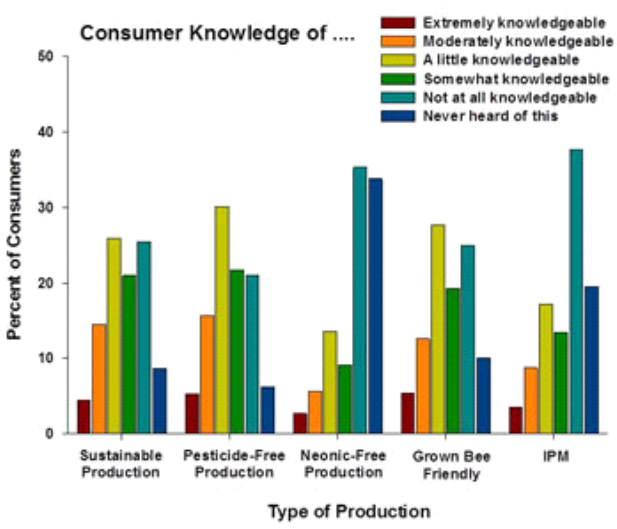


Table 2.
Self-identified knowledge on a scale of 1 (Never heard of this) to 6 (Extremely knowledgeable) of the production practices: sustainable production, pesticide-free production, neonicotinoid-free production, grown bee-friendly and integrated pest management.

If They Know Plants, They're More Concerned

We sought to understand if the plant purchaser was more knowledgeable about pest management practices during production compared to those who don't regularly buy plants. Retailers who rely on impulsive plant purchases might not benefit from advertising alternative pest management practices as much as those selling to more interested, regular consumers. We therefore separated the survey respondents into two groups: 1) those who had purchased plants in the last 12 months and 2) those who had not purchased plants in the last 12 months.

As you might expect, consumers that purchased plants in the last 12 months universally rated themselves as more knowledgeable about pest management production practices than the non-plant purchasers. For example, 71% of people who had purchased a plant in the last 12 months said that “bees are not harmed” in “bee-friendly plant production” compared with 57% of people who had not purchased a plant in the last 12 months.

All respondents were asked to rate how important some characteristics of the plant were in their purchase decision on a scale of 1 (Not at all important) to 7 (Very important). Respondents reported that the most important factors were: 1) the plant should have very little plant damage, 2) the plant has no insects on it, and 3) that there are no pesticide residues on the leaves. The plant purchaser group also valued those factors the most, but valued them even more than the consumers who had not purchased a plant in the last 12 months.

Implications for Retailers

Of the production practices presented to the survey respondents, bee-friendly production practices were the best understood. Neonicotinoid-free production was the least understood alternative pest management practice. In addition, retailers selling to consumers who routinely buy plants are more likely to see a benefit in marketing plants with an alternative pest management practice. In Part 2 of this article, we’ll present consumers’ willingness to pay a premium for neonicotinoid-alternative practices.

Who We Talked To and What They Buy

We collected a wide array of demographic information:
• Fifty-five percent of the survey respondents were female and most (84.4%) were Caucasian.
• 30.1% had a 4-year college degree; 23.8% had some college education.
• 54.3% lived in a suburban area, 23.5% lived in a rural area and 22.2% lived in a metropolitan area.
• The majority (57.6%) of the participants earned an income between $20,000 and $79,000.
• All U.S. states were represented in the survey.
• Most popular plants purchased in the last year included: annual flowering plants (62.9%), vegetable plants (48.3%), herbs (31.3%) and indoor foliage plants (27.5%).
• 59.1% were from home improvement or hardware stores; 44.7% from independent, free-standing garden centers; 30.5% from mass-merchandisers; 22.1% from supermarket or grocery stores; 7.4% from online sources and 3.1% from print catalogs. **GP**

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