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Results of a Horticulture Survey Completed by Agriculture and Biology Students attending High Schools in Illinois, Iowa, Minnesota and Wisconsin

Michael E. Compton[1,2]

School of Agriculture, University of Wisconsin-Platteville, 1 University Plaza, Platteville, WI 53818

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Abstract

Students enrolled in agriculture and biology classes were surveyed to determine their interest in pursing a baccalaureate degree in horticulture at a four-year university. A questionnaire was sent to agriculture and biology instructors at fifty high schools in northwestern Illinois, northeastern Iowa, southeastern Minnesota and Wisconsin. Students were asked several questions pertaining to horticulture. A total of 1000 questionnaires were mailed. Of the 451 surveys received, about 47% of the high school freshmen, sophomores, juniors and seniors indicated that they were interested in horticulture. About 41% of the students interested in horticulture wanted to work in landscaping, 20% greenhouse, 14% florist shop and 7% in turfgrass management. Over 70% of the students indicated that they wanted to own and operate their own horticultural business. About 50% of the students indicated that they preferred to combine an emphasis or minor in Agribusiness or Business Administration compared to agronomy (19%), biotechnology (14%), plant breeding and genetics (13%) or comprehensive horticulture (2%) with their horticulture degree. The above information was used to develop a major in Ornamental Horticulture.

Introduction

Public need for horticultural products has rapidly increased in recent years. Floral product and plant purchases were at record levels in 1998 (Johnson, 1999). Retail expenditures for these products reached $54.6 billion, which

[1]Associate Professor

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was a 5.5% increase over 1997. Ornamental Horticulture, also referred to as the Green Industry or Environmental Horticulture, accounted for 80% of grower sales, or $38 billion. Within ornamental horticulture, about 79% of retail sales were for trees, shrubs, nursery stock and turf.

Escalating sales has increased the need for quality ornamental horticulturists. Employment of landscaping, grounds, nursery, greenhouse and lawn service workers is expected to increase 10 to 20% over the next five years, adding 93,000 to 185,000 new jobs (Anonymous, 1998a). The demand for landscape architects and designers is expected to increase 25 to 35% through 2005 (Anonymous 1998b) bringing the total number of new jobs in ornamental horticulture to over 200,000. Anticipated growth in construction of commercial and industrial buildings, shopping malls, homes, highways and recreational facilities is expected to fuel the demand for new workers.

Student enrollment in ornamental horticulture programs is expected to increase as the industry grows. This study was designed to estimate student interest in horticulture by surveying students from 50 high schools in northwest Illinois, northeast Iowa, southeast Minnesota and Wisconsin. Information generated through the survey was used to develop an ornamental horticulture major at the University of Wisconsin-Platteville.

Materials and methods

The population for this study consisted of freshmen, sophomores, juniors and seniors from 40 high schools in Wisconsin, and 10 high schools in northwest Illinois, northeast Iowa and southeast Minnesota. Schools chosen for the survey were those that had either agricultural science or biological science programs and typically request a visit from a UW-Platteville School of Agriculture representative. To prevent bias of the population, instructors were asked to distribute the questionnaire to all of their students regardless of career interest.

A questionnaire (Figure 1) was developed to estimate student interest in horticulture and identify specific areas of horticulture in which students planned study in college and obtain employment. The survey was also designed to estimate the number of students interested in operating their own business and to identify areas of study that students would like to combine with a horticulture major.

Data were collected through a mail survey. A cover letter explaining the purpose of the study, 20 questionnaires and a prepaid return address envelope were mailed to agriculture or biology instructors at each school. Responses were converted to percentages by dividing the number of respondents for each category by the number of students that responded to that question. Percentage data were analyzed using Chi-square and means evaluated using standard error of the mean. All data were analyzed using Statistx® analytical software (Anonymous 1998c).

Results

Over 45% of the of the 1,000 questionnaires mailed were returned. Of the 451 respondents, 211 (46.8%) indicated that they were interested in horticulture. This level of interest was higher than expected (^{2}= 6.11; p = 0.015). Based on a preliminary survey conducted in 1998, about 35% of University of Wisconsin-Platteville students majoring in biology, soil and crop science, and reclamation indicated that they were interested in horticulture (unpublished data). Therefore, it was expected that about one-third of the high school students surveyed would be interested in horticulture.

Over 42% of students surveyed were interested in a career in landscaping. Overall, careers in ornamental horticulture [e.g., greenhouse mgt. (20%), florist shop (13%), turf (8%), nursery and garden center (4%) and landscaping] were more popular than fruit science (3%) or vegetable (2%) production. About 6% of students interested in horticulture wanted to work in a related plant science such as agronomy or biology and pursue horticulture as a hobby or alternate career choice. These figures parallel growth in the horticulture industry and enrollment in baccalaureate horticulture programs. According to the Federal Bureau of Labor Statistics (Anonymous, 1998a), employment of landscaping, grounds, nursery, greenhouse and lawn service workers is expected to increase 10 to 20%. An even greater demand (25 to 35% increase) for landscape architects and designers is anticipated (Anonymous, 1998b). These projections indicate that more than 200,000 jobs will be created in these areas through 2005.

About 70% of the students interested in horticulture indicated that they would like to operate their own business (data not shown). This figure was higher than expected. Based on a preliminary survey, it was expected that about half of high school students would be interested in entrepreneurship. According to the According to the Federal Bureau of Labor Statistics, 25% of horticulturists are self-employed (Anonymous, 1998a).

Students interested in horticulture were asked to indicate their preference of horticulture major. Of the five choices, most students (58%) indicated that they preferred a major in ornamental horticulture. Fewer students were interested in turf (18%), fruit (10%) and vegetable (5%) science. About 12% of the students surveyed wanted to major in another plant science, agriculture business or business administration (other). Results of this survey are similar to a national survey of undergraduate baccalaureate horticulture programs. In his survey, Couvillon (1991) reported that 56% of undergraduate students majored in ornamental horticulture, 8.6% in floriculture, 3.7% in

Figure 1. Horticulture interest surveys mailed to collaborating high schools.

HORTICULTURE INTEREST SURVEY

1. **Please indicate your class standing.**
   Freshmen Sophomore Junior Senior

2. **Are you interested in horticulture?**
   Yes No

   If you answered yes, please continue.
   If you answered no, please return your survey.

3. **In what field of horticulture do you plan to work?**
   Landscaping Turfgrass management
   Fruit production Vegetable production (canning company)
   Greenhouse Florist shop
   Research and education Graduate school
   Nursery or garden center Other, please specify _____

4. **Would you like to operate your own business someday?**
   Yes No

5. **Which area of horticulture would you like most to major in?**
   Ornamental horticulture (landscaping and floriculture)
   Turfgrass management (lawns and golf course)
   Fruit production (tree fruits, small fruits and nuts)
   Vegetable production
   Other, please specify _____

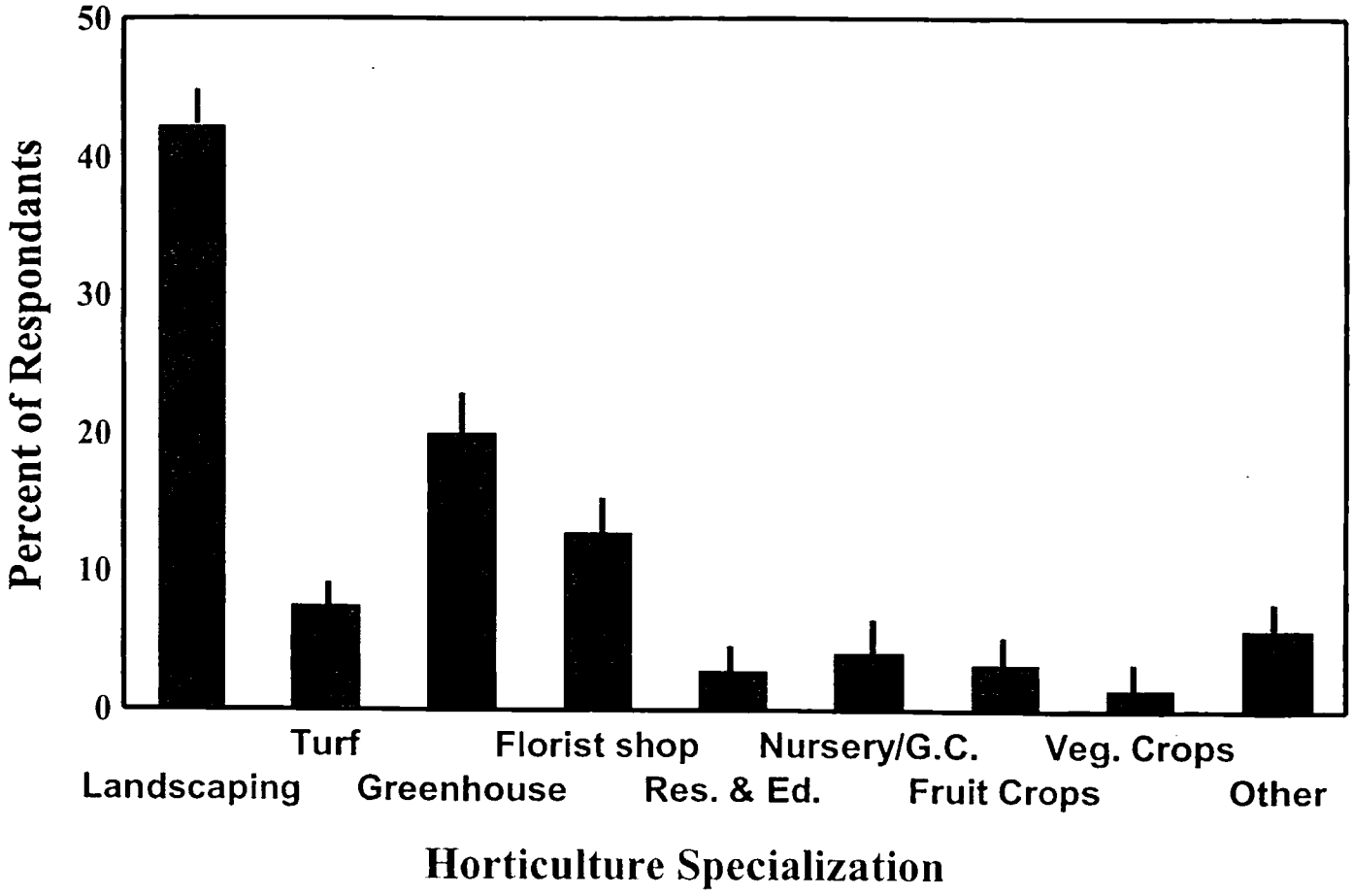
6. **What type of emphasis or minor would you prefer in combination with a horticulture major?**
   Agribusiness Biotechnology
   Business management Plant Breeding and Genetics
   Soil and Crop Science Comprehensive horticulture
   Other, please specify _____

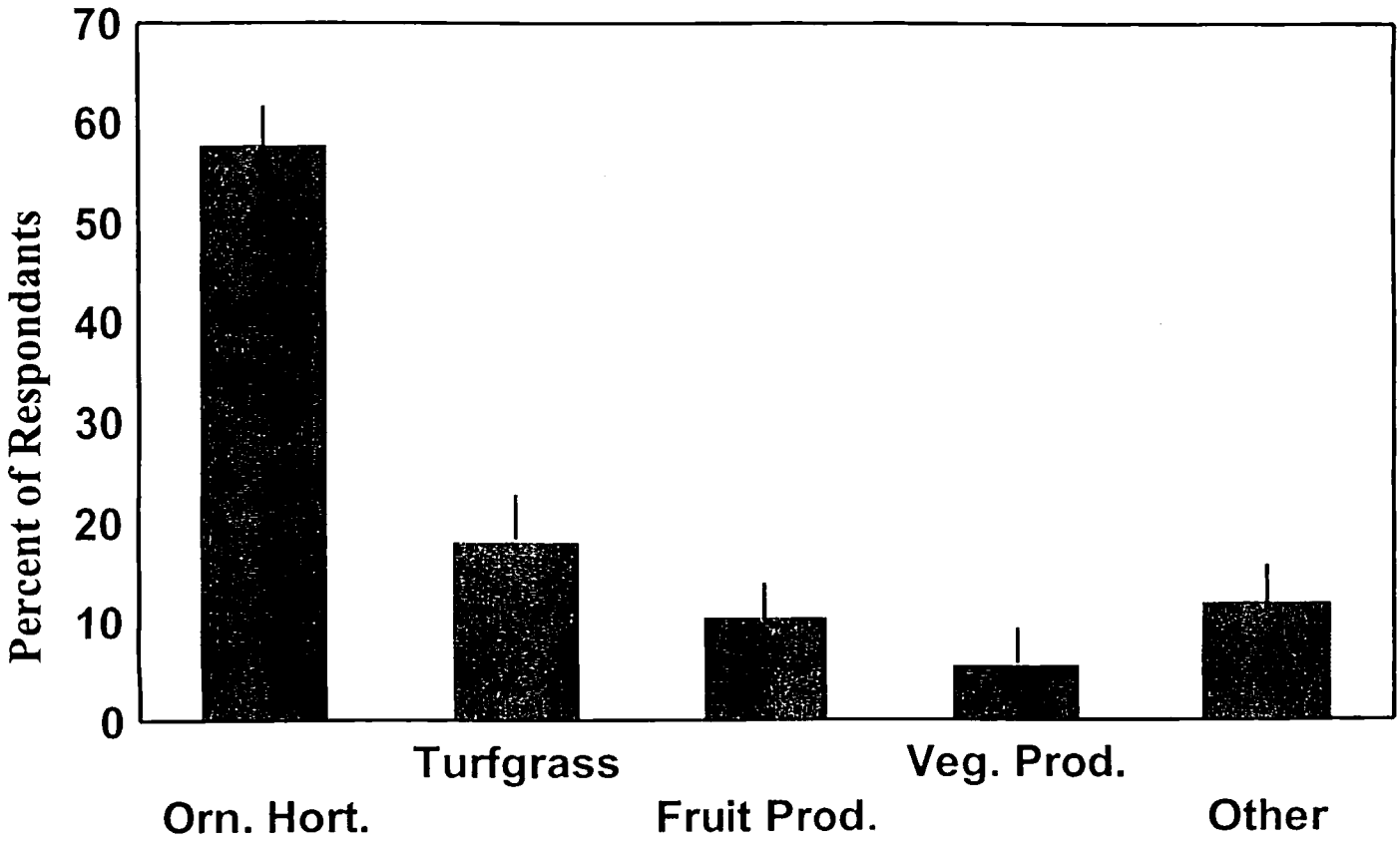
7. **Are you considering UW-Platteville as your College choice?**
   Yes No

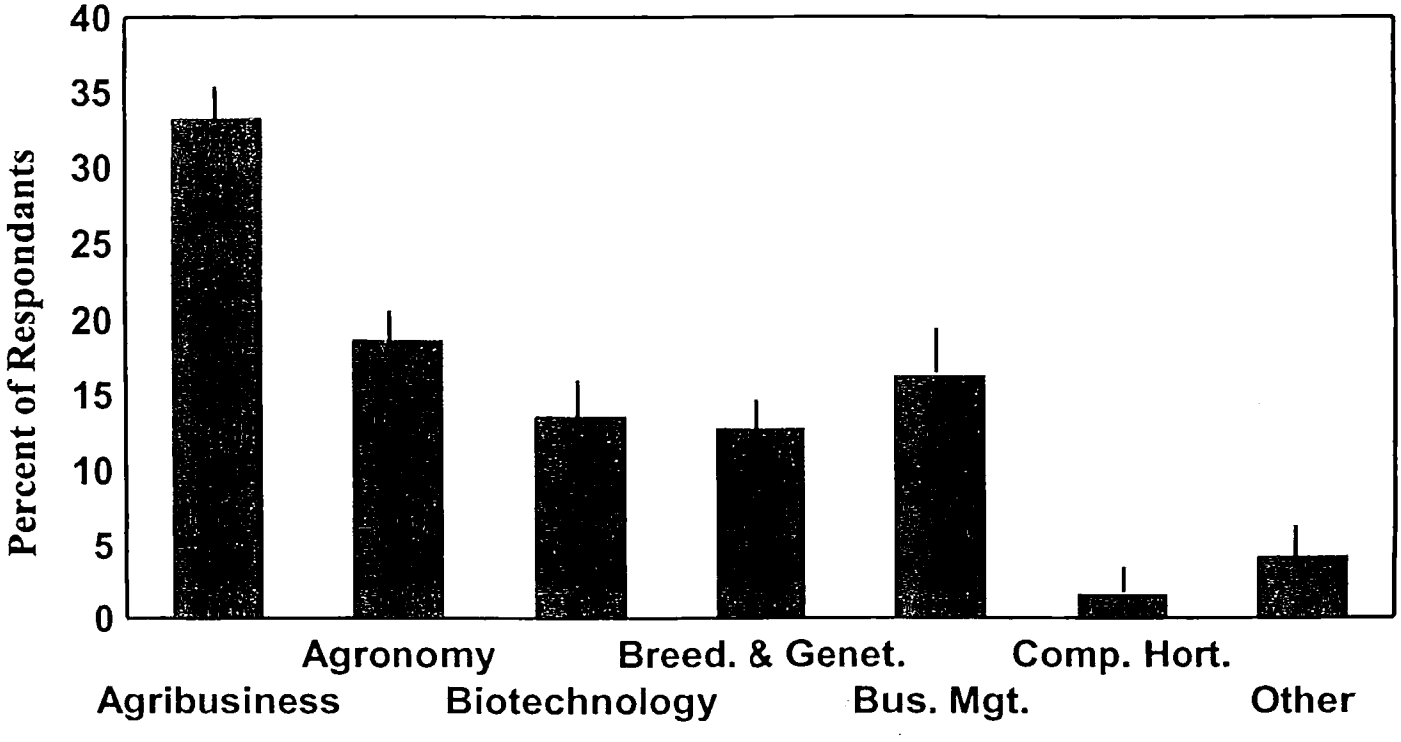
   Thank you for completing the survey. Your assistance is greatly appreciated.

pomology and 2.6% in vegetable science. One interesting observation is that 18% of high school students surveyed in this study were interested in turf science, whereas less than 7% of students enrolled in horticulture baccalaureate programs in the early nineties majored in turf science. The high interest in turf observed in this study may be influenced by the increased interest in golf that has occurred in the past five years.

Students were also asked to identify an emphasis area or minor that they felt complimented a horticulture major. Students were asked to select either agribusiness, biotechnology, breeding and genetics, business management, soil and crop science, comprehensive horticulture or specify another area of study not indicated in the survey. About 50% of students interested in horticulture selected either agribusiness (33%) or business management (16%) as a complimentary emphasis or minor. Fewer students were interested in soil and crop science (19%), biotechnology (14%) and breeding and genetics (13%). Surprisingly, few students (2%) were interested in a comprehensive horticulture major.




70
60
50
40
30
20
10
0
Percent of Respondants
Turfgrass
Veg. Prod.
Orn. Hort.
Fruit Prod.
Other
Horticulture Major


40
35
30
25
20
15
10
5
0
Percent of Respondants
Agronomy
Breed. & Genet.
Comp. Hort.
Agribusiness
Biotechnology
Bus. Mgt.
Other
Emphasis or Minor

Summary

This study was conducted to aid in the development of a horticulture major at UW-Platteville. About 47% of responding high school agriculture and biology students indicated that they were interested in horticulture. It should be noted that not all students (12%) interested in horticulture planned to select it as an academic major in college. These students indicated that they would rather major in agronomy, biology, business, education, etc (data not shown). Of the students wanting to major in horticulture, most were interested in landscaping, greenhouse and nursery management, floriculture and turf science than pomology or vegetable science. Most students felt that an emphasis in business management (agribusiness and business management) best complemented an ornamental horticulture major. However, a moderate percentage of students indicated that emphases in science and technology, and breeding and genetics were well suited for horticulture majors.

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