

OHIO VINEYARD LABOR AND MANAGEMENT SURVEY

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Introduction

Ashtabula County is Ohio's top grape production area, raising 68% of the state's 2,000 acres of grapes. This survey was developed in response to two community needs. The Northeast Ohio Grape Committee determined there was a need for a more skilled vineyard workforce. At the same time, the Horticulture Department of the Ashtabula County Joint Vocational School was conducting a program review, and determined more viticulture classes should be offered in their secondary horticulture program. Both groups requested OSU Extension to develop a survey to determine the technical and soft skills desired for vineyard employees in Ohio.

A survey instrument was developed in the spring of 2005 utilizing input from the Ohio grape industry. In collaboration with Dr. Bruce Bordelon from Purdue University, Indiana grape growers helped to test pilot the survey in the summer of 2005. Recommendations for improving the survey were considered and changes were made accordingly. This project was reviewed by the Institutional Review Board at The Ohio State University and the human subjects were deemed exempt from providing signed release agreements.

Procedures

Ninety-nine grape growers in the state of Ohio were mailed the survey in the fall of 2005 asking them to participate in the Ohio Vineyard Labor and Management survey. Forty-seven growers (response rate of 47%) responded to the survey, with 26 raising primarily Concord juice grapes and 21 raising wine grapes. The total acreage of grapes grown by the respondents was 765.80 acres of grapes. Of this total, 503.55 acres were juice grapes, 256.5 wine grapes and 5.75 table grapes. Data was analyzed using the statistical program Statistical Package for the Social Sciences (SPSS). Cross tabulations were completed to examine any differences between juice grape growers versus wine grape growers.

Current Labor Situation

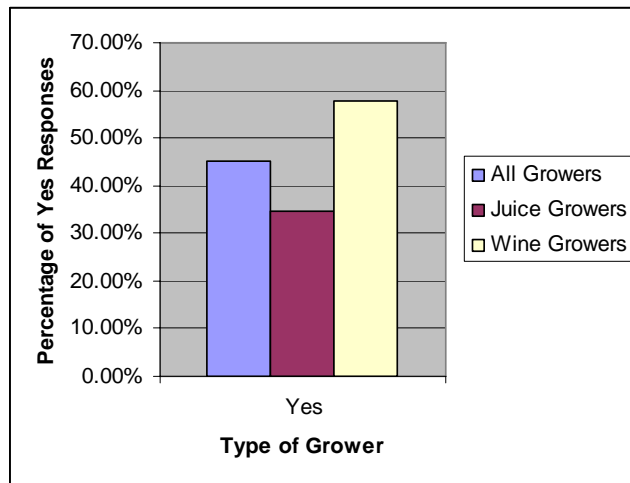
Growers were asked a series of base line demographic questions. These questions examined existing labor needs, migrant labor and housing, labor limitations, and the vineyard tasks most commonly hired for in the State of Ohio. Growers were asked to identify their current labor needs. Thirty-six percent of the respondents hire full-time employees for vineyard work, 78% hire part-time workers, and 6% employ seasonal migrant labor.

Growers were asked if the availability of labor was limiting the size of their operations. Seventy-four percent of growers indicated available labor was not limiting their operation. Growers were also asked if the availability of federally approved migrant worker housing was limiting their operation. Only 10.9% indicated the lack of migrant housing was a limitation.

Growers were asked if there was a need for a central call-in line to secure seasonal employees. Responses from all growers indicated there was not a large need (45.2%). Nearly fifty-eight

percent (57.9%) of wine growers were in favor of a call in line whereas 34.8% of juice growers were in favor (Figure 1).

Figure 1. Need for central call in line for labor



Pruning, tying, suckering, shoot positioning, spraying, and harvesting are some of the major vineyard activities which growers may hire labor to complete. Growers were asked which of these skills they hire seasonal or migrant labor to complete the vineyard work (Table 1). Juice and wine growers were significantly different for their responses to five of these labor areas. The top areas for juice growers to hire labor were pruning (65.4%) and mechanical harvesting (61.5%). The top areas for wine growers were hand harvesting (75%) and tying (60%). Wine growers indicated they were more apt to hire labor to help for hand harvesting, tying, suckering, and shoot positioning ($\alpha = 0.01$). Meanwhile juice growers were more apt to hire mechanical harvesting than their wine grower counterparts ($\alpha = 0.01$).

Table 1. Skill areas being hired for seasonal or migrant vineyard work.

Skill or Knowledge Area	All Growers	Juice Growers	Wine Growers
Pruning	59.6%	65.4%	50.0%
Hand Harvesting ^z	42.6%	15.4%	75.0%
Mechanical Harvesting ^z	36.2%	61.5%	5.0%
Tying ^z	36.2%	15.4%	60.0%

Suckering ^z	25.5%	7.7%	45.0%
Shoot Positioning ^z	17.0%	0%	35.0%
Spraying	17.4%	15.4%	20.0%

^z Responses for juice & wine growers were significantly different at the $\alpha = 0.01$ level.

Technical Vineyard Skills Desired by the Grape Industry

Growers were asked to indicate the technical job skills/competencies, which they wanted an employee to have knowledge of or training in, before they were hired (Table 2). The vineyard competencies developed were based on the common vineyard management practices as reported by Ohio State University Extension. Growers were asked to rate the knowledge on a 5-point Likert scale, where 1=Not Important, 2=Limited Importance, 3=Somewhat Important, 4=Important, and 5=Very Important.

The top five vineyard skills desired by growers were pruning, safe tractor operation, training systems, harvesting, and shoot positioning. Juice and wine growers differed in their ranking of these competencies. Juice growers rated pruning, grapevine growth, disease identification, training systems, and propagation of vines as their top five skills. Wine growers rated safe tractor operation, pruning, weed management, harvesting, and shoot positioning as the top skills desired.

The grower groups differed significantly with respect to three knowledge areas. Juice growers viewed the propagation of vines as a more desirable skill than the wine growers with a response of 3.33, as compared to 1.81 for wine growers. This was significant at the $\alpha = 0.01$ confidence level.

Two variables were significantly difference at the $\alpha = 0.05$ confidence level. Disease identification was identified as a greater need by juice growers at 3.61 versus 2.63 by wine growers. Wine growers, however, rated wildlife control as a more important skill (2.69), as compared to 1.75 for juice growers.

Table 2. Job training skills desired by grape growers

<u>Vineyard Knowledge</u>	All Growers (s.d.)	Juice Growers (s.d.)	Wine Growers (s.d.)
Pruning	4.24 (1.15)	4.43 (1.21)	4.00 (1.10)
Safe tractor operation	3.63 (1.16)	3.28 (1.64)	4.19 (1.38)
Training systems	3.39 (1.29)	3.58 (1.43)	3.13 (1.15)
Harvesting	3.37 (1.37)	3.17 (1.62)	3.50 (1.03)
Shoot positioning	3.37 (1.35)	3.33 (1.57)	3.38 (1.15)
Disease identification^y	3.20 (1.47)	3.61 (1.42)	2.63 (1.36)
Grapevine growth	3.12 (1.47)	3.65 (1.50)	2.69 (1.25)
Equipment maintenance	3.12 (1.45)	3.06 (1.60)	3.31 (1.25)
Insect pests	3.00 (1.61)	3.17 (1.76)	2.69 (1.40)
Weed management	2.97 (1.53)	2.59 (1.73)	3.50 (1.10)
Pesticide spraying	2.88 (1.63)	2.94 (1.78)	2.94 (1.48)
Propagation of vines^z	2.57 (1.50)	3.33 (1.50)	1.81 (1.05)
Grapevine nutrition	2.21 (1.23)	2.53 (1.51)	1.94 (0.77)

Wildlife control ^y	2.18 (1.19)	1.75 (1.18)	2.69 (1.01)
Soil fertilization	1.94 (1.28)	2.33 (1.57)	1.56 (0.73)
Vineyard construction	1.71 (1.06)	1.53 (0.94)	1.94 (1.18)
Viticulture history	1.71 (1.14)	1.76 (1.25)	1.69 (1.08)
Vineyard design	1.59 (1.02)	1.82 (1.29)	1.38 (0.62)
Vineyard economics	1.53 (0.99)	1.82 (1.29)	1.25 (0.45)

^y Responses for juice & wine growers were significantly different at the $\alpha = 0.05$ level.

^z Responses for juice & wine growers were significantly different at the $\alpha = 0.01$ level.

Soft Skills Desired by the Grape Industry

Growers were asked to rate their preference for specific non-technical related skills which they want potential employees to have knowledge of or training in before they are hired. These skills, defined as “soft skills,” included the ability to work independently, positive attitude, punctuality, team work, and language communication. Growers were asked to rate the knowledge on a 5-point Likert scale, where 1=Not Important, 2=Limited Importance, 3=Somewhat Important, 4=Important, and 5=Very Important.

Juice and wine growers rated this skill set area almost identically (Table 3). Both groups rated the ability to work independently, possess a positive attitude, and punctuality as key soft skills. Each of these variables had a mean value of between 4=Important and 5=Very Important. The remaining soft skills were ranked in the following order: ability to work as a team member, critical thinking skills, English speaking, and Spanish speaking. The ability to speak Spanish was rated by vineyard owners as having limited importance.

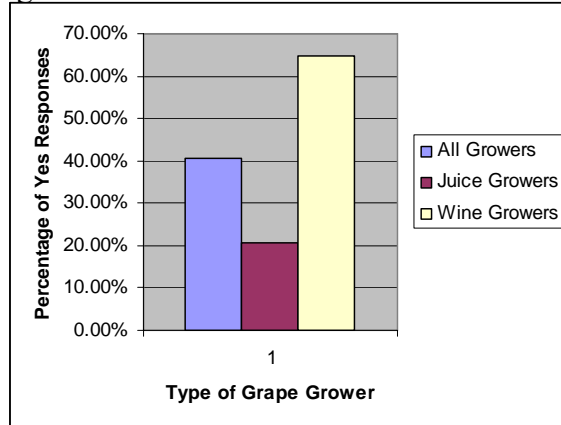
Table 3. Other job related skills

Skill or Knowledge Area	All Growers (s.d)	Juice Growers (s.d.)	Wine Growers (s.d.)
Ability to work independently	4.61 (0.74)	4.59 (0.91)	4.61 (0.50)
Positive Attitude	4.33 (1.00)	4.19 (1.21)	4.50 (0.71)
Punctuality	4.23 (1.03)	4.19 (1.17)	4.28 (0.90)
Ability to work as a team member	3.95 (1.20)	4.00 (1.23)	3.89 (1.18)
Possess critical thinking skills	3.90 (1.17)	3.90 (1.18)	4.00 (1.14)
English speaking (conversational)	3.70 (1.09)	3.86 (1.06)	3.44 (1.10)
Spanish speaking (conversational)	2.29 (1.24)	2.00 (1.12)	2.69 (1.30)

s.d. = standard deviation

Growers were asked if they had experienced problems with a worker who possessed good vineyard production skills but lacked the necessary soft skills. The responses were significantly different ($\alpha = 0.01$), where 64.7% of the wine growers answered yes and only 20.8% of the juice growers responded yes (Figure 2).

Figure 2. Experience with employees with good technical skills but no soft skills



Growers were then asked to determine which employee they would prefer to hire to work in their vineyard. Growers were asked to rate on a 5-point Likert scale their preference of soft versus technical skills, where 1 = knows a lot about vineyard work but has no people skills, and 5 = knows nothing about vineyard work but has outstanding people skills. Each grower group preferred to have an employee that knows more about the technical vineyard work yet possessing a small degree of aptitude for soft skills (Table 4).

Table 4. Technical skills versus soft skills

Average All Growers (s.d.)	Juice Growers (s.d.)	Wine Growers (s.d.)
2.33 (1.02)	2.17 (1.13)	2.61 (0.78)

s.d. = standard deviation

Advanced Training Needs of Growers

Growers were asked if they were interested in learning more about a select list of labor management topics. They were asked to rate their interest in these educational areas on a 5-point Likert scale, with 1=Not Interested, 2=Limited Interest, 3=Somewhat Interested, 4=Interested, and 5=Very Interested.

Growers, on average, responded they have limited interest in the management topics listed on the survey. The four highest ranked topics of interest were strategies for retaining good employees, governmental labor regulations, motivating employees, and environmental issues. There was no significant difference between juice and wine growers (Table 5).

Table 5. Advanced training needs of growers.

Knowledge Area	All Growers (s.d.)	Juice Growers (s.d.)	Wine Growers (s.d.)
Strategies for retaining good employees	2.92 (1.38)	2.85 (1.39)	3.00 (1.46)
Governmental labor regulations	2.89 (1.37)	2.81 (1.37)	3.00 (1.46)
Motivating employees	2.84 (1.37)	2.90 (1.41)	2.76 (1.39)
Environmental issues	2.82 (1.34)	2.73 (1.49)	2.94 (1.18)
Strategies for recruiting good employees	2.79 (1.36)	2.70 (1.42)	2.88 (1.36)
How to delegate responsibility effectively	2.70 (1.24)	2.55 (1.32)	2.88 (1.20)
Enhancing my communication skills as a manager	2.65 (1.38)	2.55 (1.36)	2.75 (1.48)
Providing effective employee feedback	2.49 (1.27)	2.37 (1.21)	2.60 (1.40)
Conversational Spanish speaking course	2.39 (1.48)	2.10 (1.41)	2.75 (1.57)
Techniques for interviewing potential employees	2.32 (1.11)	2.30 (1.13)	2.31 (1.14)
Risk management issues	2.32 (1.31)	2.05 (1.19)	2.63 (1.46)
Managing job related stress	2.32 (1.36)	2.40 (1.47)	2.19 (1.28)
Conducting effective performance appraisals	2.25 (1.13)	2.21 (1.13)	2.25 (1.18)
Excellence in customer service	2.22 (1.25)	2.10 (1.33)	2.31 (1.20)
Developing non-discriminatory policies	2.22 (1.27)	2.10 (1.34)	2.31 (1.25)
Effective coaching skills	2.19 (1.15)	2.05 (1.23)	2.31 (1.08)
Relationship building with vendors	2.14 (1.18)	1.90 (1.12)	2.38 (1.26)
Techniques for providing in-house employee training	2.14 (1.26)	1.85 (1.04)	2.50 (1.51)
Developing an employee manual	2.05 (1.05)	2.00 (1.08)	2.06 (1.06)
Developing job descriptions	1.81 (0.86)	1.68 (0.89)	1.88 (0.81)

s.d. = standard deviation

Summary

Ohio State University Extension conducted an Ohio Vineyard Labor and Management Survey in 2005 to determine the desired technical and soft skills of potential vineyard employees. Respondents to the survey indicated adults and youth looking for employment with a juice or wine grape vineyard operation will have a greater opportunity for employment if they possess skills in pruning, safe tractor operation, training systems, hand harvesting, and shoot positioning. It was also noted potential employees should possess a positive attitude, ability to work independently, and be punctual. The results of this study are being utilized by OSU Extension to develop educational programs to better enable adults to transition into the vineyard work force. One example of this was in 2007 a beginner pruning school was held for the Hispanic community. Secondary vocational schools are also using the information obtained from this survey to expand their horticulture curriculum to include more viticulture training. The Ashtabula County Joint Vocational School has grape vines at the horticulture complex and has conducted hands-on pruning classes at the Ashtabula County Grape Research Station of the Ohio Agricultural Research and Development Center (OARDC).