

Labor Use and Challenges Faced by Tennessee Nursery and Floriculture Producers

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Background and Purpose

United States greenhouse and nursery operations depend heavily on labor for planting, growing and harvesting crops. Wages and salaries plus contract labor costs represent 43 percent of production expenses for these operations (USDA, ERS, 2020). Thus, labor management strategies are fundamental to ensure the long-term sustainability of nursery and greenhouse operations. In recent years, however, it has become increasingly difficult for farms to obtain the labor they need to produce their crops. As a result, farmers look for alternative solutions to their labor needs, such as mechanizing or automating steps in their production processes, transitioning to producing less labor-intensive crops, and putting expansion plans on hold, among others (Nursery Industry Labor Listening Sessions, 2020).

The purpose of this publication is to describe the use of labor among Tennessee nursery crop-producing farms, the labor challenges faced by these farmers, and the labor management strategies they use to overcome these challenges based on data from a survey conducted in 2020. Additionally, we use this grower feedback to inform and explore gaps in resources and information University of Tennessee Extension could provide to help Tennessee nursery crop-producing farms overcome the labor challenges they are facing.

The Survey

The Tennessee Green Industry was surveyed between mid-February and early June 2020 using a mixed-mode approach similar to Dillman et al. (2014). The survey was paper and web-based, with the web-based version being administered through Qualtrics. The survey was distributed to a statewide list of individuals with a nursery license, which was made available by the Tennessee Department of Agriculture (TDA). TDA license holders included the following three license categories: nursery (581), greenhouse (257) and dealer (542) for a total of 1,380 licenses. A total of 258 surveys were returned for a response rate of 20.6 percent. From the 258 total returned surveys, we used the 153 survey responses from respondents who indicated being primarily nursery or greenhouse growers. We limit the data analyzed to a subset of TDA license holders who responded to the survey who either exclusively grow or primarily grow but have some retail sales. We exclude data from those businesses that are exclusively retail because labor needs for retailers are different from growers' needs.

Survey questions were developed to understand the Green Industry's perceptions of labor availability for their business in 2019 and changes in availability over the previous three years, business labor needs, and labor challenges and strategies used to mitigate those challenges. The survey

also asked questions to characterize their current labor use, including the use of the H-2A program. Finally, the survey asked questions to capture grower and farm business characteristics, such as acres in production, revenue, type of production and years of operation.

We evaluated the representativeness of the survey sample by comparing average sales per operation for the survey sample and the population of Tennessee nursery and greenhouse growers according to the 2017 Census of Agriculture. According to the 2017 USDA Census of Agriculture, average nursery sales were \$451,559 per operation. In contrast, for the survey sample included in this publication, the average sales per operation (including growers and grower/retailers) were \$733,071 (n=112). Notably, however, among those who were growers only (no retailing), the average sales per operation were \$673,224 (n=76). Therefore, nursery and greenhouse operations included in the survey sample are larger in terms of firm sales than the average Tennessee operation. It is possible that larger farmers might be more likely to answer a survey targeting labor issues as labor availability is critical for their business’s long-term sustainability. It is also possible that smaller farmers might be less likely to respond to the survey because they might be understaffed and therefore less likely to have the time and resources to fill out the survey.

Respondent Characteristics

For greenhouse and nursery producers, the average respondent of the Tennessee Green Industry survey represented a business that was established in 1990 and ranged from being established in 1923 to 2019. For those growers who also retail, the average date of establishment was 1993 and ranged from 1887 to 2019. Most, 62 percent of respondents who were growers indicated growing nursery/greenhouse crops only, while 38 percent of the

growers described their business as nursery/greenhouse production with some retail sales. As stated above, the average sales per nursery/greenhouse operation are \$733,071, which is about \$281,000 higher than the average sales per operation according to the 2017 Census of Agriculture (USDA, NASS, 2020). About half of the respondents, 46 percent, indicated that their nursery/greenhouse business represented between 75 percent and 100 percent of their 2019 household income, while about 33 percent of the respondents indicated that nursery/greenhouse business represented less than 50 percent of their 2019 household income.

Labor Use

Respondents to the Green Industry survey indicated they employed an average of nine workers in 2019 (Table 2). As the size of the operation increases, the average number of employees per operation increases, with farms with more than \$750,000 in annual sales employing almost 20 times more employees than those farms reporting less than \$175,000 in annual sales. The average number of full-time employees for the growers in the survey sample was five, with farms with more than \$750,000 in sales employing more than six times as many full-time employees as farms with less than \$750,000 in sales. The survey results indicate that those farms with more than \$750,000 in sales were more likely to employ part-time workers. Survey respondents reporting more than \$750,000 in sales employed, on average, 4.5 part-time workers in 2019. Respondents indicated a low use of H-2A workers. On average, growers indicated they employed an average of about one H-2A worker, but those with more than \$750,000 in sales employed on average about two H-2A workers in 2019 (Table 2).

Table 1. Average number of paid workers involved in the nursery or greenhouse business in 2019, as reported by the respondents to the 2020 Tennessee Green Industry survey.

	Farm size in sales			
	Sample average	<= 175k	>175k and <750k	>=750k
Total Workers	9.2	1.4	4.3	19.8
Full-time employees	5.1	0.2	1.9	11.7
Part-time year-round employees	2.3	0.6	1.5	4.5
Temporary or seasonal employees*	1.0	0.6	0.7	1.6
Temporary workers through the H-2A program	0.8	0.0	0.2	2.0

*Excludes H-2A workers.

Labor Challenges

Respondents to the Tennessee Green Industry survey were asked to evaluate how similarly the following labor constraints or challenges described their labor situations. Respondents could choose from four categories ranging from “Not at all like me” (1.0), “Slightly like me” (2.0), “Somewhat like me” (3.0) or “Exactly like me” (4.0).

Challenges related to hiring and retaining local labor appear somewhat greater than the other challenges and constraints; however, all of the challenges ranked above 2 “Slightly like me” (Figure 3). Additionally, the responses indicate that issues surrounding labor have been increasing over the last three years.

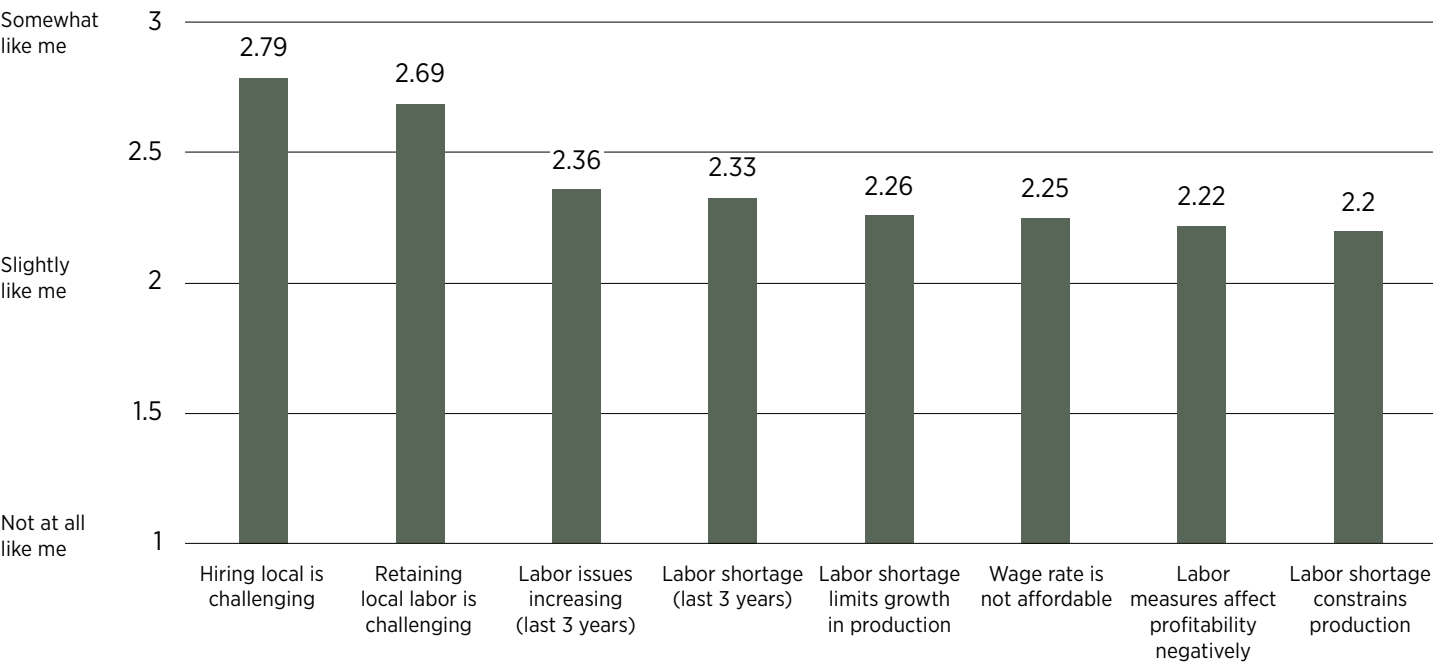


Figure 1. Labor-related challenges and constraints faced by the Tennessee nursery or greenhouse producers (n=104).

Strategies Used to Overcome Labor Challenges

Respondents to the nursery grower survey were also asked the question “what are you doing, or doing more of, to address labor shortages in the last three years?” The most used strategy to overcome labor challenges is paying higher wages to employees, with nearly 47 percent of growers selecting this option (Figure 2). The second and third most used strategies to overcome labor challenges among survey respondents are adopting mechanized technologies and training employees. These strategies were selected by 32

percent and 23 percent of growers, respectively (Figure 2). About 13 percent of grower respondents indicated using H-2A labor to address their labor challenges (Figure 2). Adding benefits was selected by just 10 percent of grower respondents. This option, which could be costly, may be constrained by low wholesale prices affecting profitability. For example, between 2015 and 2018, the area in greenhouse production increased 12 percent, but sales only increased 9 percent (NASS, 2019). Additionally, the seasonality of production tasks may be a barrier to adding benefits, as some laborers are laid off for the winter.

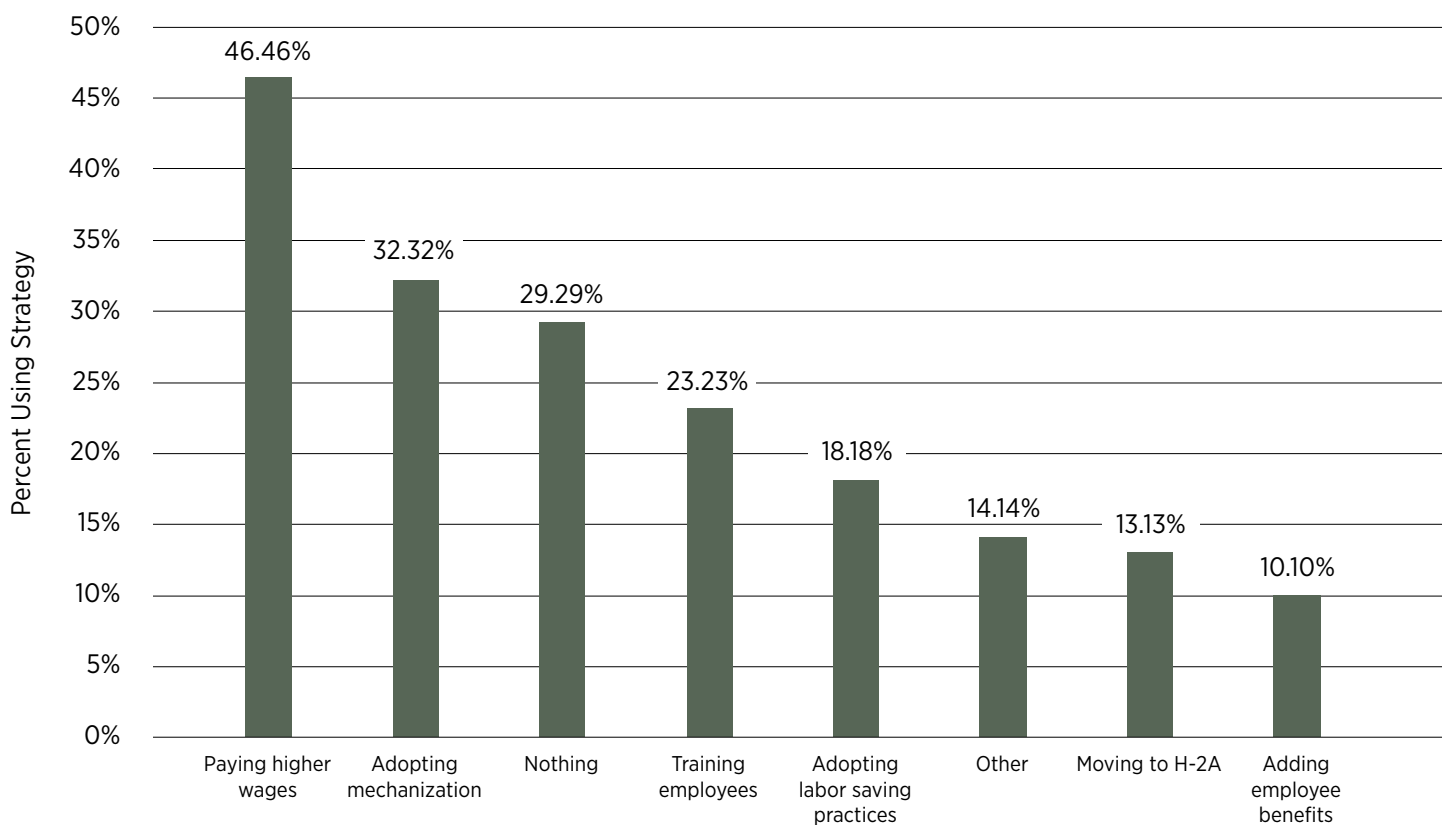


Figure 2. Strategies to address labor shortages being used by the Tennessee nursery or greenhouse producers over the last three years (n=99).

Discussion

Labor is an issue not only affecting Tennessee producers, but is also of national significance for the Green Industry. Nationwide, nearly 80 percent of nursery producers identify labor shortages as the most significant issue for their business (McClellan, 2018). Addressing the workforce challenge is vital to helping the Green Industry sustain current production levels, but is also essential to supporting its growth. Respondents to the Tennessee Green Industry survey who indicated they anticipate their nursery sales will grow in the next five years (n=111) estimated their sales would increase on average 16.5 percent over that same timeframe. In order to achieve and sustain that growth, labor challenges will have to be actively addressed and overcome with long-term, sustainable solutions.

Based on respondents' answers regarding the labor challenges they face, information regarding strategies to attract and retain productive employees would be important in helping growers address labor issues. For example, UT Extension could develop educational materials or share existing resources with growers related to employee selection strategies, incentive pay and labor management diagnostics to provide growers with tools that

might increase their likelihood of attracting and retaining productive farmworkers.

Even though mechanization seems to be the second most used strategy to address labor shortages among nursery and greenhouse growers, only 32 percent of the respondents selected this option. Therefore, providing information such as cost-benefit analyses, return on investment and payback period on labor-saving technologies, as well as demonstrations of these technologies for growers, are additional ways in which UT Extension can assist growers and enable them to make informed decisions about automation and labor-saving technology adoption.

Finally, 29.3 percent of respondents indicated they were doing nothing to address the labor shortages faced by their business. UT Extension could assist the Green Industry by investigating why nearly a third of respondents are not addressing this issue and helping them develop realistic strategies to face this pervasive industry issue. With labor costs accounting for over 40 percent of production expenses, optimizing labor use and finding solutions to address labor challenges is an important aspect of planning and preparing for the Green Industry future.

Acknowledgments

The authors would like to thank the Tennessee Department of Agriculture, the Middle Tennessee Nursery Association and the Tennessee Nursery and Landscape Association for their support of the survey reported in this publication as well as USDA SCRI grant #2020-51181-32137 for partial support of this publication. The authors also thank the nursery and greenhouse growers who completed and returned their surveys.

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