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2023 Michigan Greenhouse Extension Labor Survey: Summary of Findings

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Survey Sample and Response

The first round of this survey was administered to in-person participants at a greenhouse industry group meeting where respondents filled out paper survey forms anonymously. A subsequent online version was sent out via email to greenhouse farmers through Michigan State University Extension contacts. The second round of paper surveys were delivered by hand to various greenhouse operators attending a subsequent greenhouse extension meeting. Participants had the option to either fill in the survey immediately or fill it out later and return it via mail. We received responses from 45 greenhouse farmers: 35 paper responses and 10 online responses.

Survey respondents were asked to indicate in which Michigan county they produce. Our respondents cover 11 Michigan counties: Allegan, Barry, Genesee, Ingham, Kalamazoo, Kent, Muskegon, Ottawa, Van Buren, Washtenaw, and Wayne County. About 39% of respondents produce in Kalamazoo County, followed by 20% in Ottawa County, and 9% in Kent County. The generalizability of responses to the population of all greenhouse farmers in Michigan depends on (a) how representative the survey respondents are of that population, and (b) whether those who chose to complete the survey are similar statistically to those who did not.

Results

Employment and Incentives

Respondents were asked if their greenhouse operations were ever unable to hire all of the employees it wanted to hire during 2023. Forty-five percent of operators indicated that they had a labor shortage.

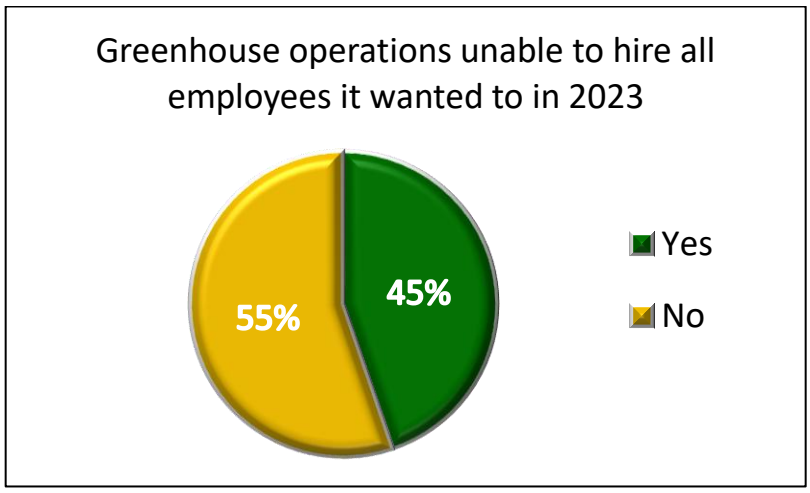

Figure 1. Answer to question: "During 2023, was your greenhouse operation ever unable to hire all of the employees it wanted to hire?"

To estimate if greenhouse operators were running a labor deficit, we asked how many employees were employed during 2023 and how many were needed to operate at full capacity. The average number of employees needed by our respondents was 40

employees. The average reported labor shortage among all employers who experienced a labor shortage was 31%.

We asked farmers about the types of employment incentives they offered during 2023. Respondents could select more than one incentive. The most popular incentive offered was schedule/work flexibility (52%), followed by production bonuses (18%), health insurance (18%), and transportation stipends (7%).

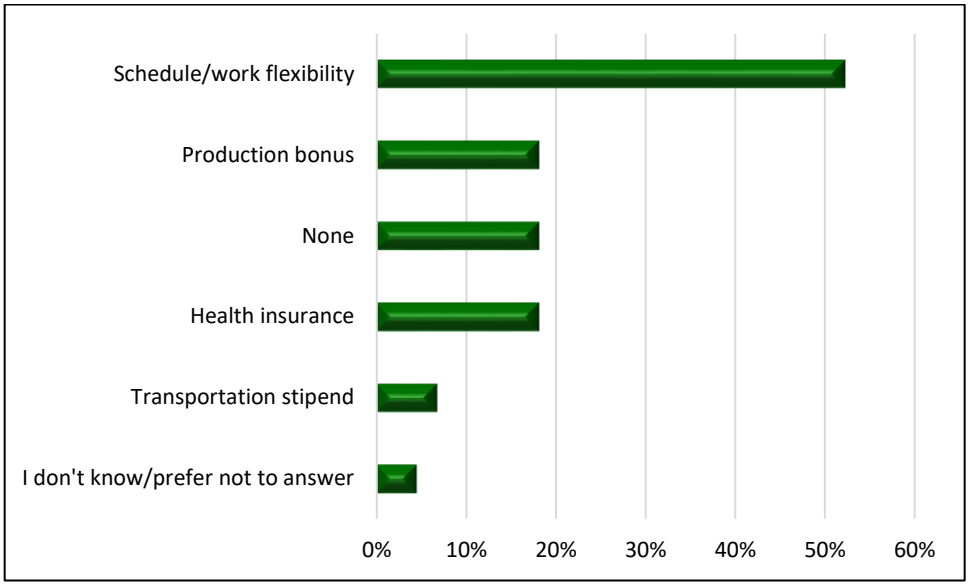

Figure 2. Response to question: "During 2023, what incentives did your greenhouse operation offer its employees?"

We asked farmers to compare their employment levels between 2022 and 2023. The majority of respondents (47%) hired about the same number of employees between the two years, followed by 31% who employed more, and 22% who hired fewer.

H-2A Visa Employment

We asked growers if they employed H-2A visa workers during 2023. Out of the 45 responses we received for this question, 33% responded that they employed H-2A workers during 2023. Those who responded "yes" were asked approximately how many H-2A workers they employ (including those who were hired directly or through a farm labor contractor or other source). The average numbers of H-2A workers employed during 2023 was 14 employees.

Operators were also asked to specify how they navigated the application process for H-2A employees. Of those surveyed, 24% responded to this question, and they all used a farm labor contractor except for one who used a growers association.

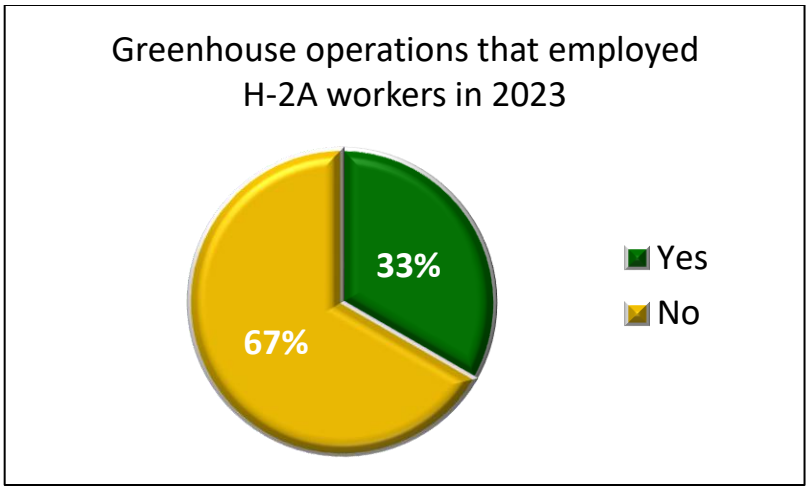

Figure 3. Answer to question: "During 2023, did your greenhouse operation employ H-2A workers (either directly or through a farm labor contractor or other source)?"

Given that H-2A employees are normally restricted to a maximum of 10 months of work in the US, we asked growers if their operation has employment opportunities for H-2A workers that would last longer than 10 months if it were allowed. Of the 15 operators that answered this question, only 4 answered "yes."

We asked growers about the ideal length of time that H-2A employees could remain in the US without having to return to their home country based on their operation's employment needs. Only three farm operators reported that the ideal length of time H-2A workers could stay in the United States was greater than 10 months, suggesting that the current H-2A program is sufficient for most of the farmers who responded to this question in our survey. One farmer mentioned that only larger greenhouse operations would have H-2A labor needs that would last longer than 10 months per year because most smaller operations slow down or close their operations during the winter while larger ones continue to operate.

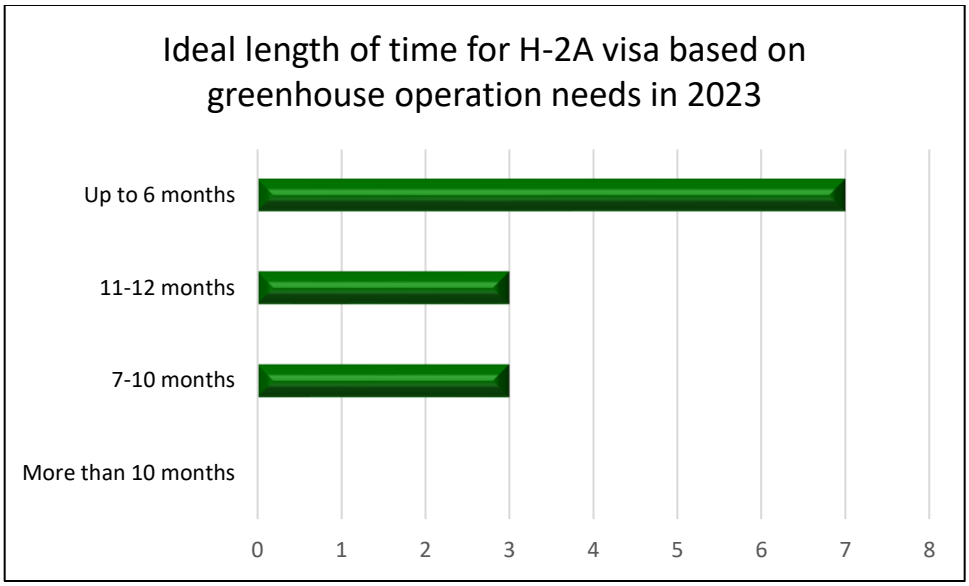

Figure 4. Response to question: "Based on your greenhouse operation's employment needs, what would be the ideal length of time that H-2A employees could remain in the United States without having to return to their home country?"

Perceptions of H-2A Productivity

Of the greenhouse operators who employed H-2A workers, we asked about the perceived productivity of H-2A and non-H-2A workers. A majority of respondents (60%) indicated that H-2A employees were more productive, followed by 30% who said they were about the same, and 10% who felt they were less productive than non-H-2A greenhouse employees. On average, farmers found their H-2A workers 36% more productive than non-H-2A workers.

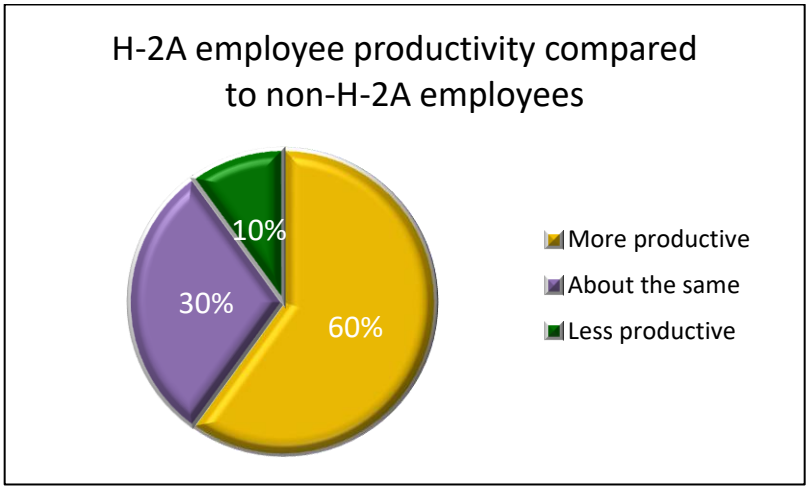

Figure 5. Answer to question: "Are/were your greenhouse operation's H-2A employees more productive, less productive, or about the same as its non-H-2A greenhouse employees?"

Growers were also asked to estimate the total cost of employing H-2A workers compared to employing non-H-2A workers. On avergage, farmers reported that their H-2A employees cost 41% more than non-H-2A workers.

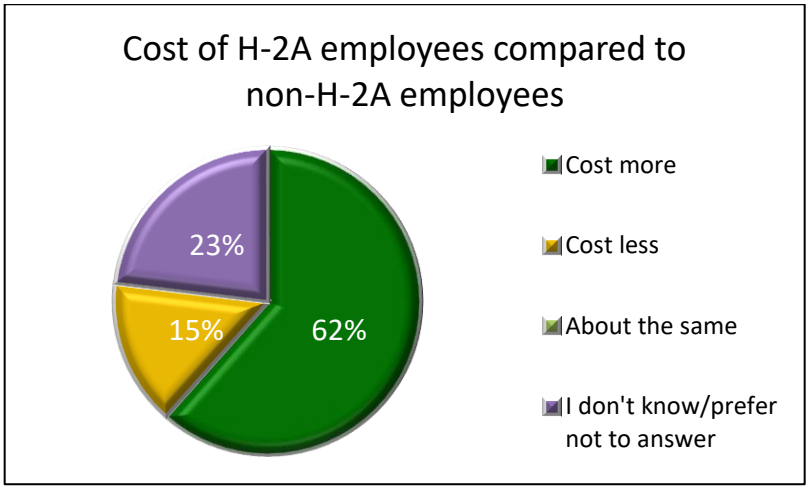

Figure 6. Answer to question: "Considering the total cost of employing H-2A workers, including housing, transportation, meals, and other costs, but not considering differences in productivity, did your greenhouse operation's H-2A employees cost your business more, less, or about the same as its non-H-2A employees?"

Labor-Saving Technologies

Another solution to labor shortage issues is employing new technology that requires less labor. Thirty-nine percent of operators reported using labor-saving technology in 2023 to reduce their reliance upon labor.

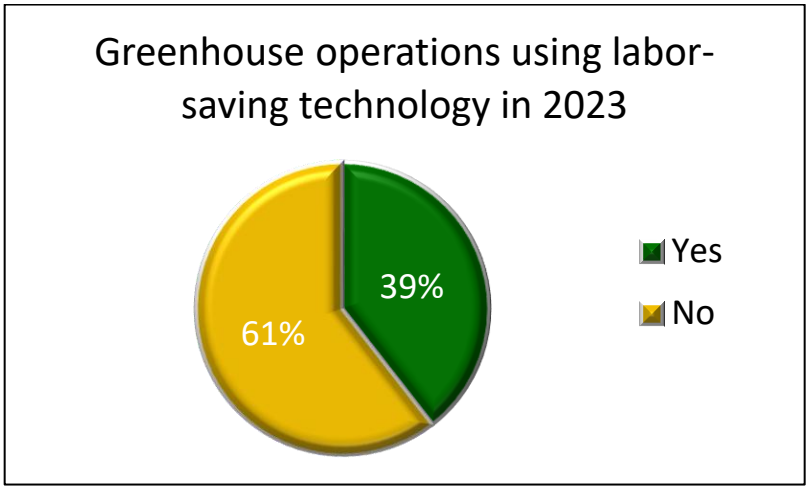

Figure 7. Answer to question: "During 2023, did your greenhouse operation start using any new labor-saving technologies to reduce the number of employees it requires?"

Farmers were asked to identify the type of labor saving technology they used and were allowed to select more than one answer. The most popular labor-saving technology employed by the greenhouse operators in our survey was automated substrate mixing and delivery systems (47%), followed by production/inventory counting, monitoring, and

scoreboard display systems (27%), transportation automation (27%), robotic liner, plug, or cutting planting automation (20%), and automated fertilizer system (20%).

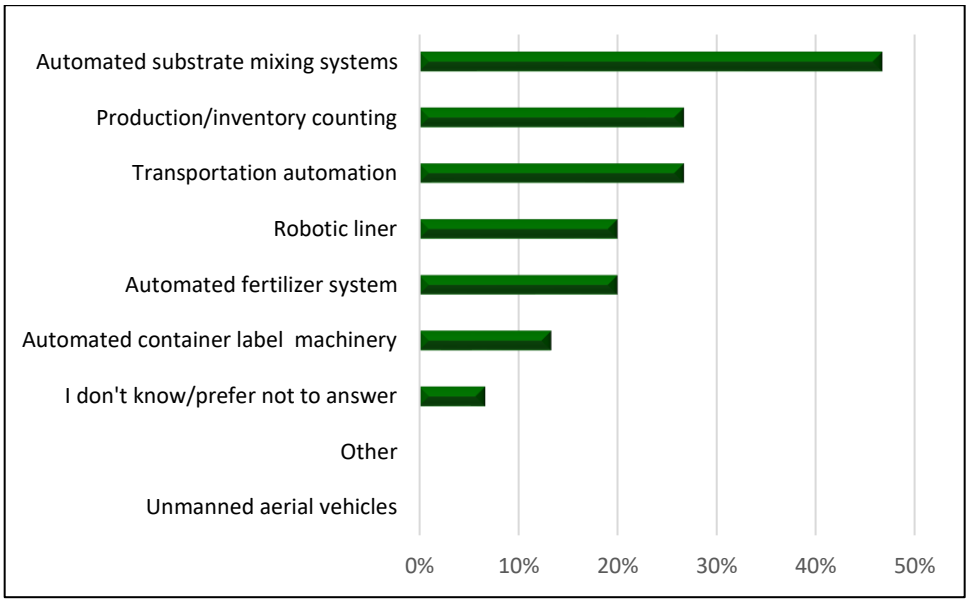

Figure 8. Response to question: "During 2023, which new labor-saving technologies did your greenhouse start using?"

We asked growers to estimate the approximate cost of the new labor-saving technologies they started using in 2023. Seventy percent of respondents answered that the new technology cost less than $100,000 and 30% answered that it cost between $100,000-249,999. None answered that it cost more than $250,000.

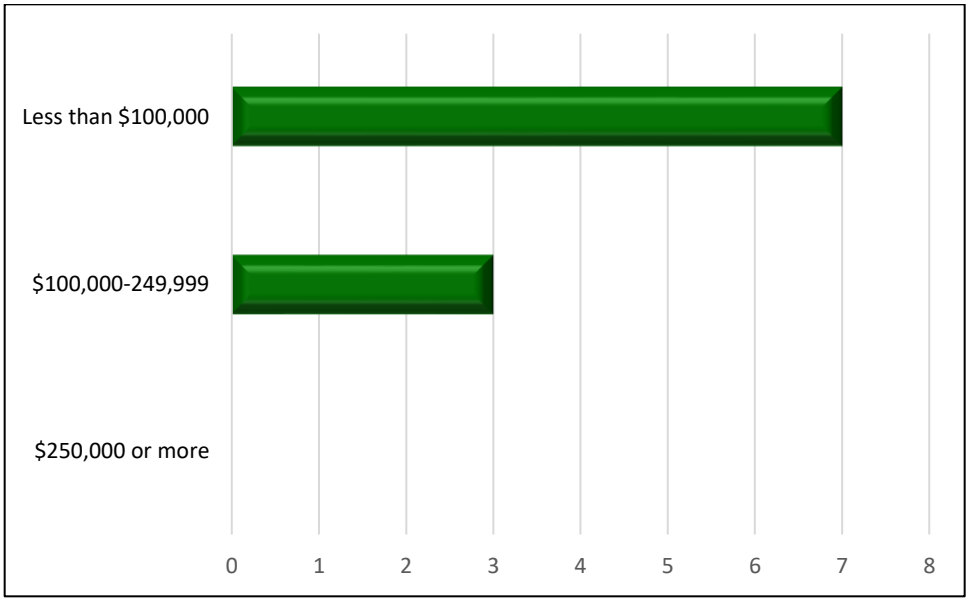

Figure 9. Answer to question: "Not considering any financing charges (such as loan interest), what was the approximate cost of the new labor-saving technologies your greenhouse operation started using in 2023?"

Of those who employed labor-saving technology in 2023, 60% answered that the new technology reduced the labor needs of the operation. On average, they estimated that the technology reduced their labor needs by about 5%.

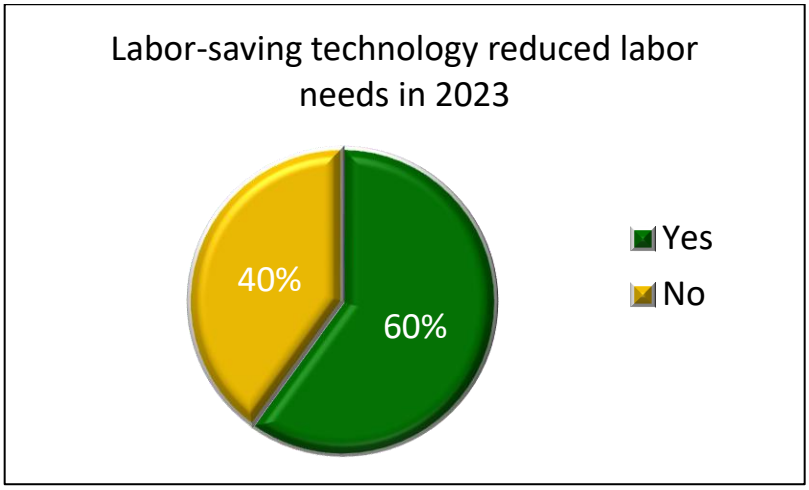

Figure 10. Answer to question: "Did the new labor-saving technology your greenhouse operation started using in 2023 reduce your labor needs in terms of the number of employees required to conduct its normal operations?"

We asked growers if they made changes to their product mix to reduce labor costs. The majority of producers, 60%, responded that they did not make product mix changes for that reason while 40% indicated that they did.

At the end of the survey, we asked an open-ended question about other operational changes that growers made to help address labor availability issues. Common responses included some type of financial incentive, such as monetary rewards for each recommended hire, bonuses for employees who stay until the end of the season, increased wages by a few dollars, and extra overtime pay. Some operators selected certain crop varieties that reduced the time needed for cutting and trimming or simplified their crop mixtures altogether.

Conclusion

We surveyed a sample of 45 greenhouse operators in the state of Michigan. Although we did not use a balanced identification strategy to select our participants, our sample included greenhouse operators from counties with major greenhouse production activities. Forty-five percent of the operators could not meet the labor demands to run their greenhouse at full capacity and reported an average labor deficit of 31%. For perspective, the average grower who would have normally hired 40 workers, but faced a labor shortage, would have only been able to hire 28 workers during 2023.

H-2A use was not common for this sample of growers, with only 33% reporting that they employed H-2A workers. The H-2A program is rapidly expanding, and producers had mixed

opinions on whether they would use the program in the future. Some farmers expressed interest in hiring H-2A workers but can't afford the wage and housing requirements. Other respondents shared that their priority is hiring local first, but if that is no longer an option, then they would switch to H-2A.

About 39% of our sample reported using labor-saving technology to help address labor shortage issues in 2023. Most of these technologies cost less than $100,000. Of the respondents who adopted a labor-saving technology, 60% reported that it reduced labor needs with an average reduction of about 5%. About 40% of growers made a change to their product mix to reduce labor costs.

When focusing on the productivity and cost difference between H-2A and non-H-2A greenhouse employees, farm operators reported that H-2A labor was more expensive but that H-2A employees were also more productive. Our results suggest that the productivity premium for H-2A workers offsets most of the higher labor costs.