

Arizona Statewide Commercial Viticulture Needs Assessment



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Introduction

Although vinifera grapes have been cultivated in Arizona since at least the eighteenth century (Berg, 2018), recent decades have ushered in a renaissance for the state's wine industry. From 2012 to 2021, the industry has roughly doubled in both planted acreage and wineries (Bickel et al, 2021). One of the missions of University Extension is to support emerging industries with objective, science-based information which will enable them to grow to their full potential. The inception of any good Extension program requires direction. While an Extension agent may have extensive experience working in a specific program area, every community is different and faces a unique set of challenges. Often, an agent's best resources of information are the community members themselves, and there are two principal sources of community information. The first is the Advisory Board, a group of individuals appointed with the express purpose of consulting with local Extension to ensure that programming is applicable to the stakeholders. The second is the needs assessment, a survey designed to help the agent understand the community and its priorities, in order to develop impactful programming. The Statewide Commercial Viticulture Program began in July of 2022, and the first step in program identification and planning was the rollout of the statewide viticulture needs assessment. Growers responded by stating that having a programmatic area agent for viticulture was their top priority for Extension/Technology Transfer and that top programming priorities included irrigation, pest and disease management, soil fertility, weather and weed management.

Methods

The survey consisted of 49 questions and was conducted from December 2022 to May of 2023 throughout the state of Arizona using Qualtrics software in an exclusively online format accessible by web link or QR code. Respondents were contacted through the Yavapai College Viticulture and Enology Program, The Arizona Winegrowers Association, and word of mouth, including advertisement while the agent was out in the community delivering programming. The survey questions were developed through the lead author's previous knowledge of the wine industry and review and input from all authors. Since this survey dealt exclusively with viticulture (as opposed to winemaking or oenology), it was advertised "Attention all growers, viticulturists, and vineyard owners!" in order to ensure that the correct demographic was solicited (figure A). Ultimately, 56 people responded to the survey, though not every question was answered by all respondents, and some questions gave the option for multiple selections within a single question.

Attention all growers, viticulturists, and vineyard owners! The University of Arizona Cooperative Extension is conducting a Statewide Viticulture Needs Assessment and requires your help. Your anonymous feedback is essential, as it will inform Cooperative Extension as to how it can best serve the Arizona wine grape industry. Topics include production, irrigation, fertility, pest, pathogen, and disease management, among others. To access the survey, use the link or QR code below. If you are having trouble with the link try using a different browser, copy and pasting link, or refreshing the page.

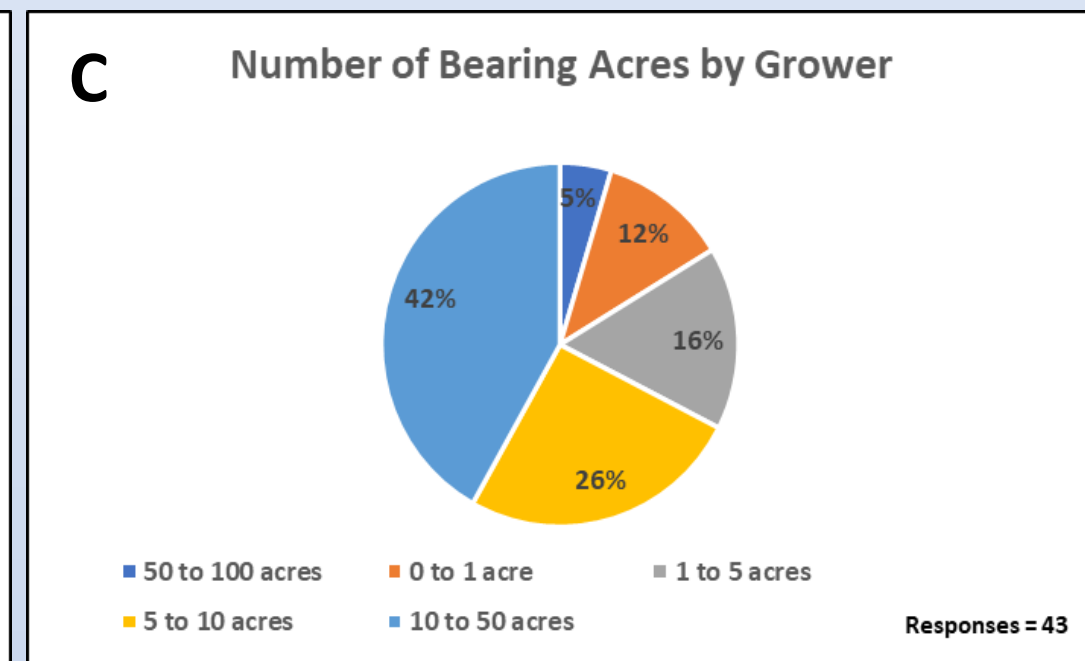
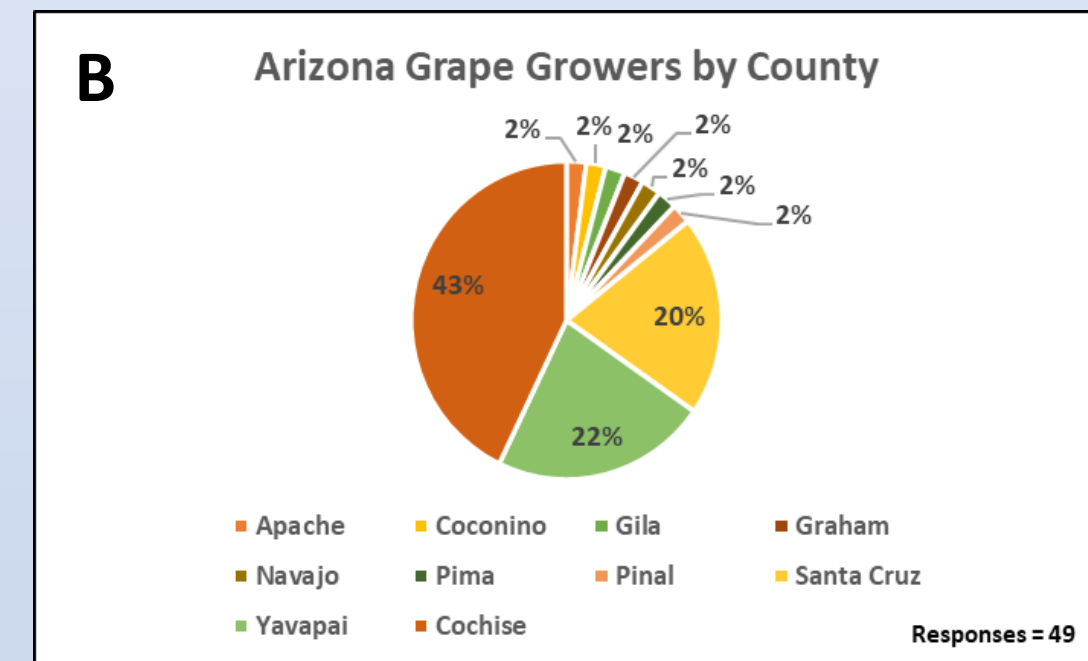
<https://tinyurl.com/AZViticultureSurvey>

If you have any questions about the Needs Assessment Survey, please feel free to contact:

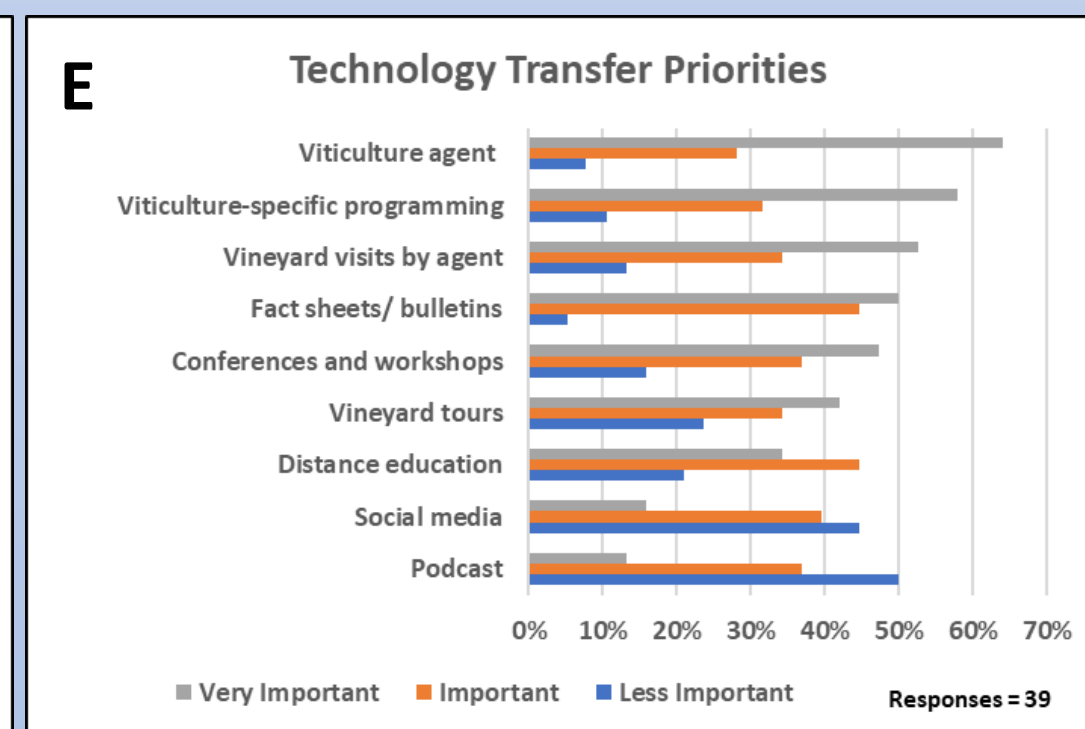
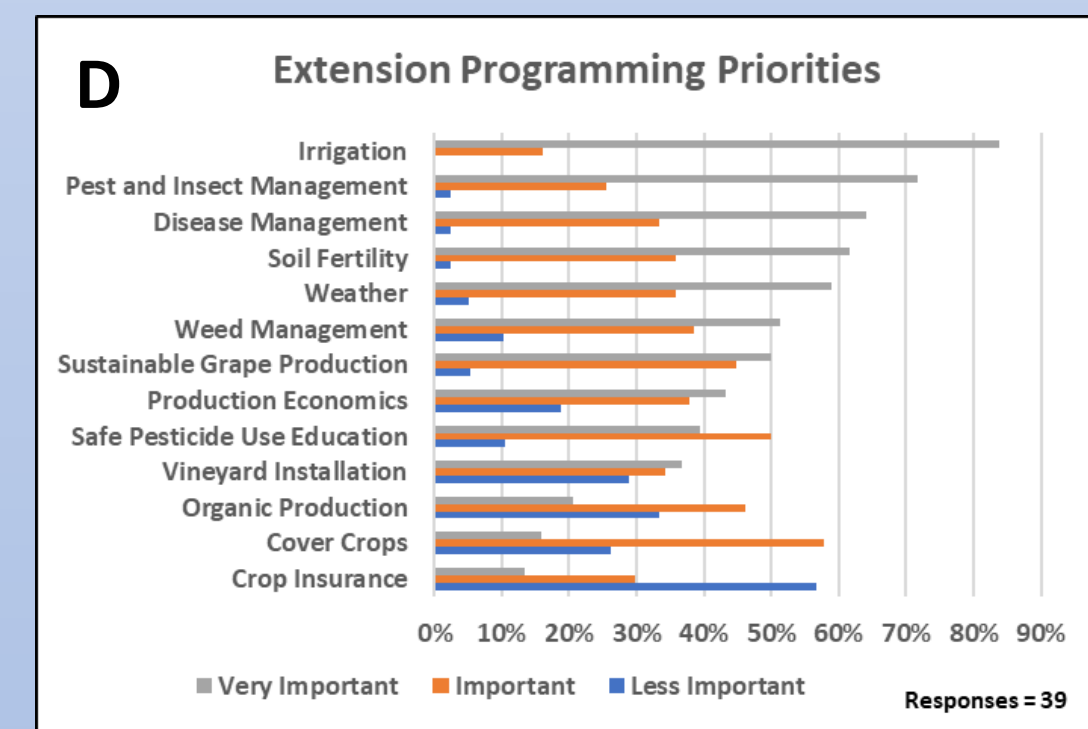
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Results

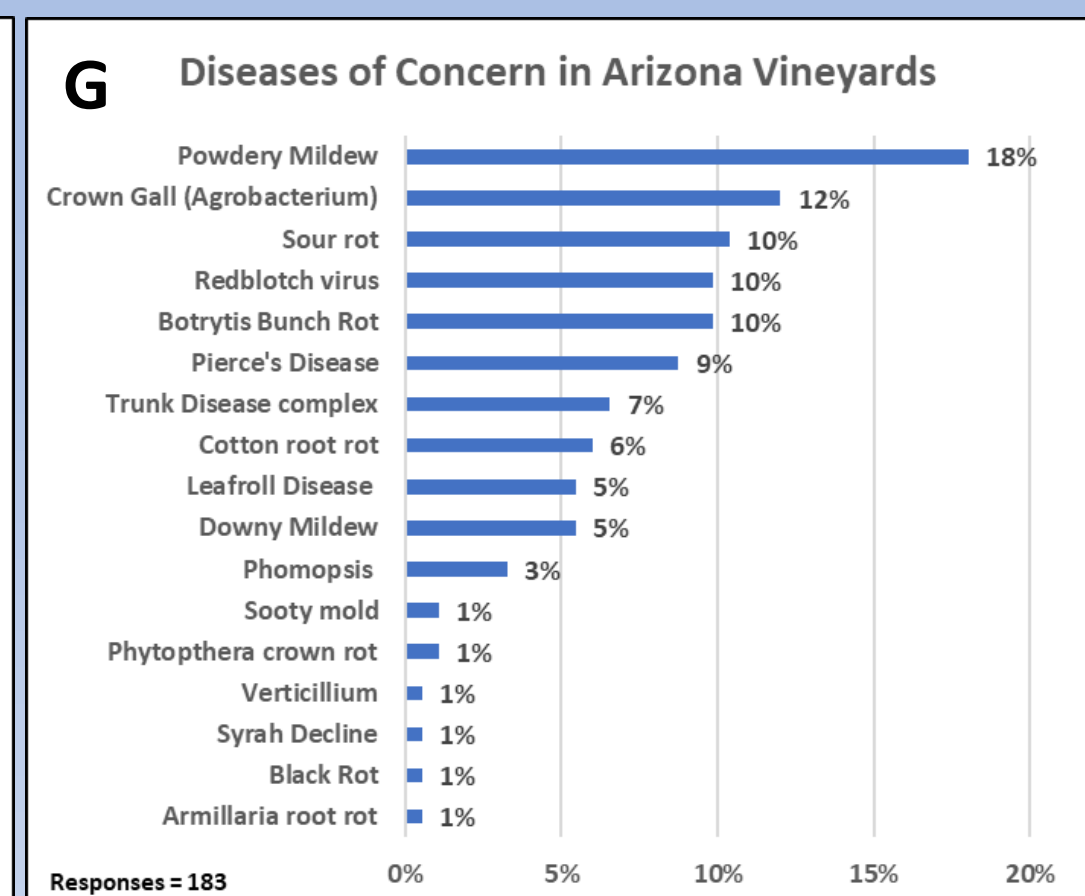
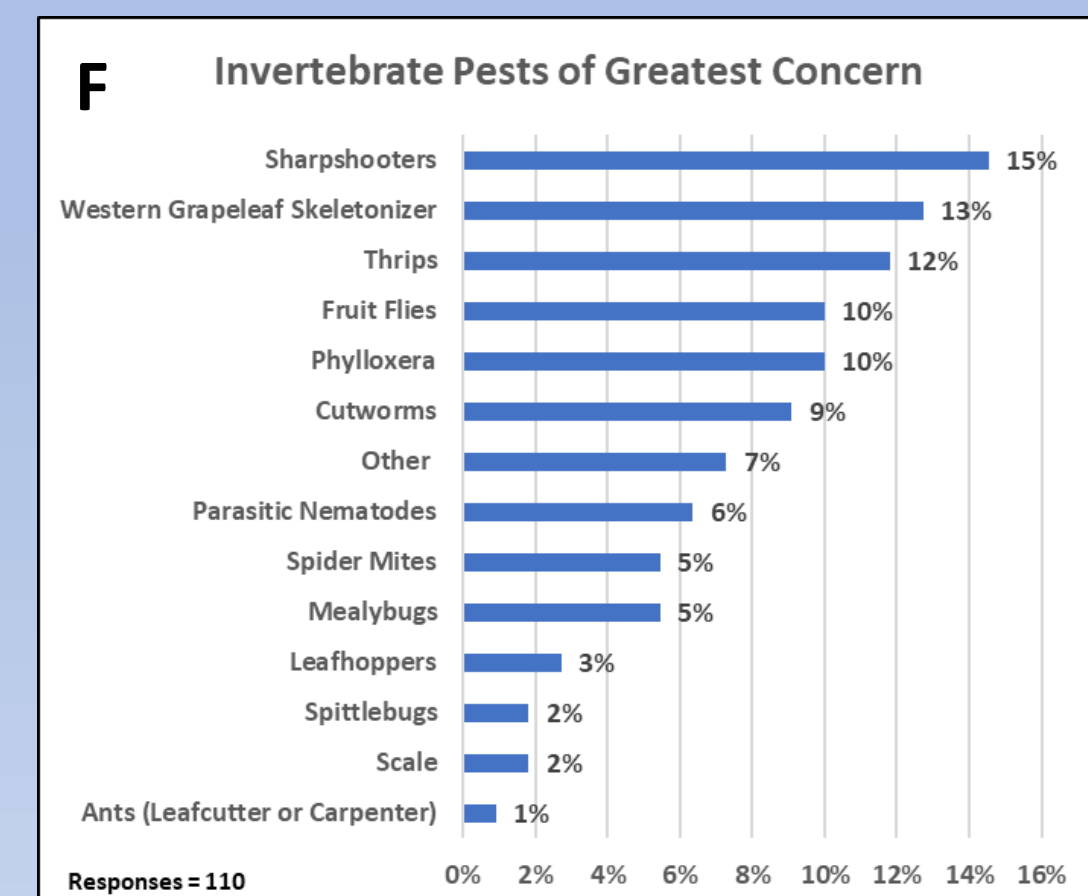
- The majority of Arizona grape growers are first generation "family" farmers in Cochise County (figure B) with more than ten years of experience.
- The most common sized vineyard operation was between 10 and 50 acres of bearing vines (figure C), with most respondents stating that they sold at least some of their grapes to other wineries, including those outside of the county of origin



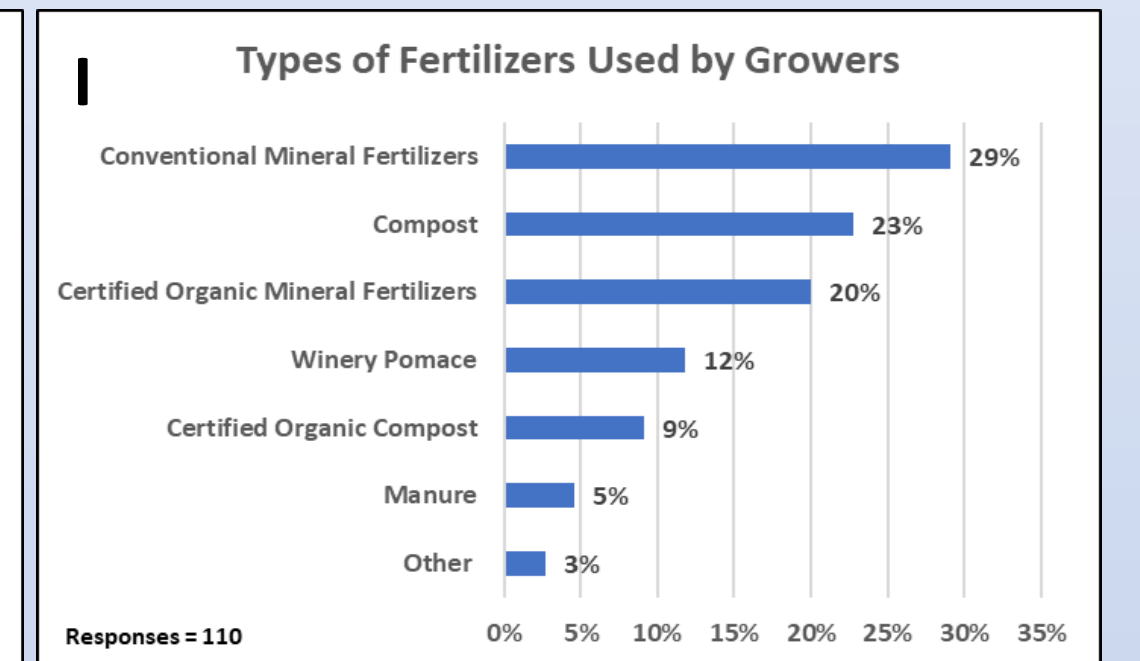
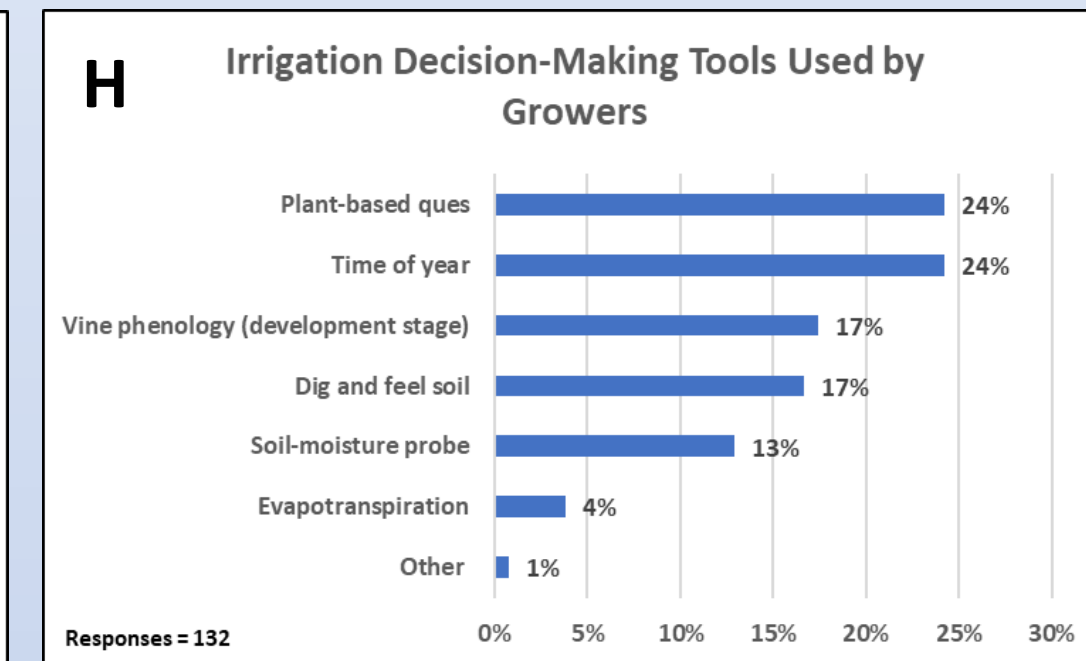
- Irrigation management was the number one programming priority amongst growers, followed by pest and disease management, soil fertility, weather and climate, and weed management (figure D)
- Having a viticulture agent was the greatest technology transfer priority, followed by viticulture programming, and agent vineyard visits (figure E)



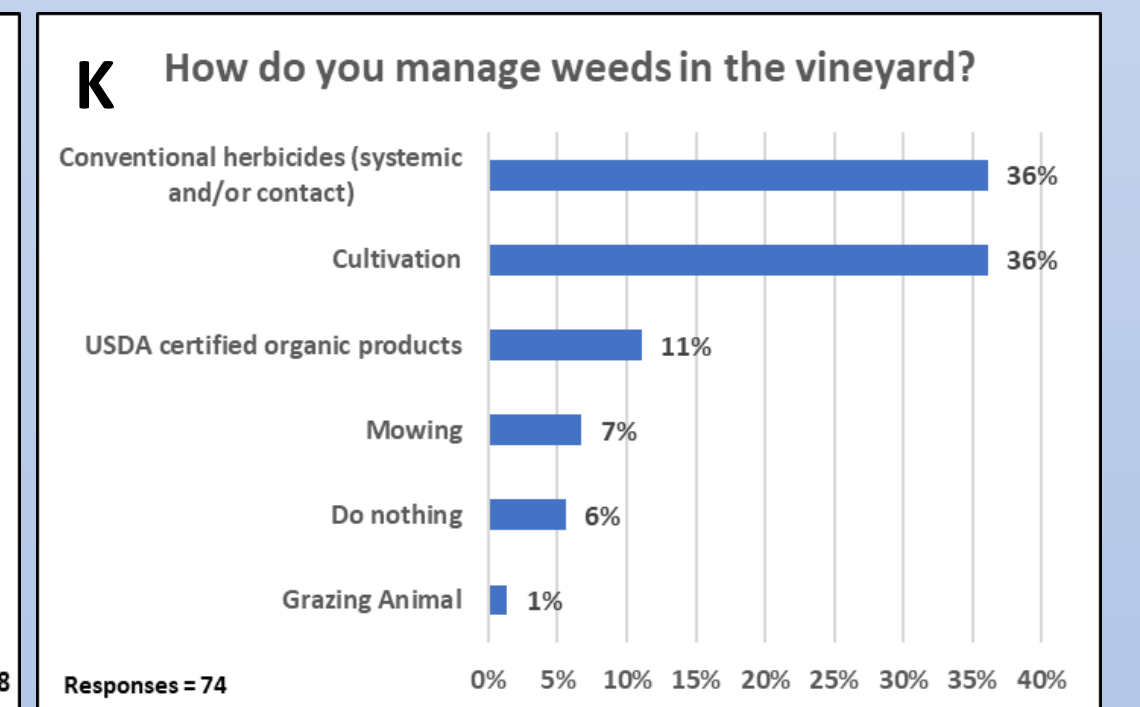
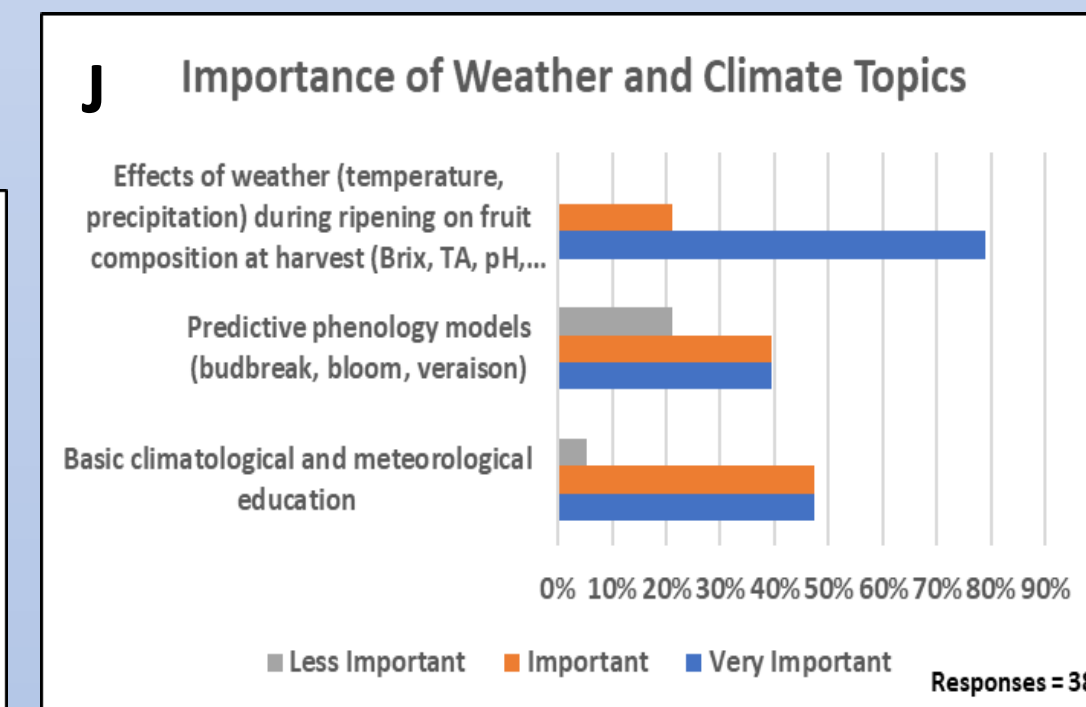
- Invertebrate pests of greatest concern included sharpshooters, grape leaf skeletonizer, thrips, and fruit flies (figure F)
- Diseases of greatest concern included powder mildew, crown gall, and sour rot complex (figure G)



- The most common water source amongst growers was a well, with the vast majority (91%) using drip irrigation. Common irrigation decision-making tools were plant-based ques and time of year (figure H). 83% of growers had some level of concern about their future water resource, though many had plans in place to address the issue.
- All growers used some method to amend or fertilize their soil, with the most common types being conventional mineral followed by compost, and certified organic fertilizers (figure I)



- Growers consistently stated that the effects of weather on fruit composition was "very important" (figure J)
- Conventional herbicides and cultivation methods were employed equally by respondents (figure K)



Conclusion

By conducting this needs assessment, The University of Arizona now has a better understanding of the priorities and needs of grape growers throughout the state and can use the data to work towards meeting them. Programming and scholarly contributions will be rolled out to meet those needs immediately. It was not possible to reach every grower in the state and Extension work, by nature, is a moving target. As programming is delivered, new issues will arise and the understanding of the needs of growers will become even more apparent. Further, it is likely that more focused needs assessments will be needed in the future, or perhaps another, more extensive iteration in 5 years or so.

References

Berg, E., 2018. Equal age for age: The growth, death, and rebirth of an Arizona wine industry, 1700-2000. *Journal of Arizona History* Vol. 59, No. 3.

Bickel, A., Duval, D., Frisvold, G., 2021. Vineyards and wineries in Arizona: An economic contribution analysis. University of Arizona Cooperative Extension Department of Agriculture and Natural Resources Publication.