UC CE UNIVERSITY OF CALIFORNIA Agriculture and Natural Resources Cooperative Extension

Meeting the Challenge of Grapevine Viral Disease Management: Optimizing Informational Resources and Extension Programming

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Understanding how growers use educational resources to learn about grapevine viral diseases helps extension educators optimize outreach activities to effectively disseminate scientific knowledge and increase the adoption of management practices.

This document summarizes feedback on 14 educational resources that was collected during a survey (n=145) and interviews (n=42) with viticulture specialists in California and Washington. Based on the feedback, resources were categorized as high, medium, or low priority, which was judged by evaluating their reach, persuasiveness, and impact. Categorizing and presenting the information in this way guides extension educators on where and how to focus outreach efforts to support adoption of grapevine viral disease management practices.

References:

1. Hobbs M, Vengco S, Moyer M, Bolton S, Bettiga L, Cooper M. (2023). Meeting the challenge of viral disease management in the wine grape industry: demystifying decision-making, fostering agricultural networks, and optimizing educational resources. *Australian Journal of Grape and Wine Research*. doi.org/10.1155/2023/7534116.

https://ucceviticulturenapa.wixsite.com/uccevitnapa

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HIGH PRIORITY RESOURCES

Persuasive, trusted, applicable across regions, and impact large audiences.

1

Extension Educators have a trusted central role in agricultural knowledge networks**.** They create educational materials, answer questions, share resources, connect growers with experts, and provide on-site support.

- *Highly regarded for knowledge creation and dissemination.*
- *Provide multiple types of support for disease management.*
- *Generate valued and trusted educational materials.*
- *Well-connected to researchers and local industry.*

2

Agricultural Social Networks are venues for peer-to-peer conversations and social learning that encourage widespread adoption. Assurance from trusted peers that a practice will be successful and beneficial reduces the perceived risks of adoption. Social learning speeds adoption through imitation and conformity by reducing the time and mental effort for a person to gather information.

- *Used to share experiences of disease management and tap into "big reservoir" of peer knowledge.*
- *High confidence placed in knowledge from experienced, respected, and similar peers.*
- *Information from some peers can be unreliable.*
- *Extension educators can influence conversations by directing their information at well-connected growers and integrating into their community as trusted peers.*

3

Formal Presentations, Field Days, & Interactive Workshops are core methods for transferring current, essential, high-quality knowledge to staff at all job levels. They are also opportunities to promote informal networking and strengthen agricultural social networks.

- *Preference for presentations that offer new information and summarize practical results, while minimizing the fine detail of methods and statistics.*
- *Field days are especially useful learning opportunities for skills that require hands-on practice to achieve mastery.*
- *Suggested areas for improvement:*
  - *Increase opportunities for Spanish-language events;*
  - *Avoid sessions at busiest times of season and repeat sessions where possible to allow attendance around busy schedules;*
  - *Speakers' presentation and communication skills*

- *Attributes of an effective factsheet:*
  - *1-2 pages*
  - *Limited text*
  - *Relevant images*
  - *Accessible language*
  - *Topic specific*
  - *Easily interpretable data*
  - *Key points in labelled sections*
  - *Actionable practical information*
  - *References to other resources*

Factsheets are widely used and valued when they are well-constructed and originate from a reputable source. They are a highly convenient source of information that can reach a broad audience. They are used to justify, teach, and explain disease management concepts. Spanish-language versions are valued for teaching.

4

MEDIUM PRIORITY RESOURCES

Effective for disseminating knowledge but appeal to select audiences and regions.

1

Academic Texts are viewed as a source of the latest, high-quality information. Although most growers want confirmation of the scientific evidence for practices, many do not have time to read articles in their entirety, particularly those with complex technical content. Academic articles are read by motivated early adopters and viticulturists who may summarize relevant information to share within their networks to justify or explain their recommendations.

- *Open access is encouraged to facilitate readership.*
- *Invest time to read, review, and digest content.*
- *Extension educators can make effective use of journal articles by:*
  - *Publishing in open-access journals.*
  - *Distributing articles to those likely to read them.*
  - *Supporting access when requested and where copyright is not infringed.*

- *Source and quality of production is important.*
- *Convenient and efficient format.*
- *Spanish-language versions are used for training.*
- *Webinars are efficient and increase accessibility.*
- *Growers request remote attendance as a standard option for events.*

Online Videos & Webinars are not the preferred learning style of every grower, and there is a lack of awareness that relevant videos exist. However, they can be an effective training tool and are used to disseminate key information.

2

3

Paid Consultants include pest control advisers, sales representatives, and viticulture consultants. Use of consultants varies between growers and regions, based on local situations and need.

- *Valued for their high-level of education, experience across many vineyards, and connections with other experts.*
- *Contracted to teach technical information to staff, and as 3rd party support to persuade other team members to adopt practices.*
- *Need to be reliable, remain current on technical information, and avoid perceived conflicts of interest.*

- *Participants receive the latest scientific data and communicate directly with scientists on matters relevant to their vineyard.*
- *Scientists can support effective collaborations by sharing site-specific data with participants.*
- *Growers are less likely to collaborate when projects are disruptive of farming operations or when they are reluctant to share proprietary data.*

Replicated Research Trials conducted by public sector scientists are regarded as highly useful, even if participation is selective. Early adopters are likely to participate because they can get ahead of an issue and gain access to privileged knowledge that they will disseminate through their network.

4

5

Peer Knowledge-Sharing Groups refer to neighborhood groups that foster collective action by sharing disease information, networking neighbors with one another, developing innovative strategies and carrying out joint local projects. Groups are valuable forums for peer-to-peer communication. Extension educators can positively influence groups by connecting with them where they exist.

- *Examples of neighborhood projects were:*
  - *Coordinated removal and replanting.*
  - *Sharing vector population data and disease incidence maps.*
  - *Coordinated timing of insecticide applications.*
- *Perceptions of effectiveness varied between groups.*
- *Less useful in areas of polyculture or few neighbors.*

LOW PRIORITY RESOURCES

Social media and trade journals did not rank highly due to concerns about reliability and public perceptions. In-house research trials were not widely conducted due to lack of resources.