



Developing a Sustainable Vineyard Management Plan

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What is sustainable winegrowing?

- Not same as organic
- No widely accepted definition

“....sustainable winegrape production emphasizes the use of vineyard management practices that minimize impact on the environment, are economically feasible, and address needs and interests of the community.”

- From Dlott, et al. 2002. The Code of Sustainable Winegrowing Practices Workbook. As quoted in Ozark Mountain Vineyard Sustainability Assessment Workbook.

Sustainable vs. organic

Organic

- Build/maintain healthy soils
- Minimize off-farm inputs
- Minimize impact on environment
- Requires more managerial input
- No synthetic inputs (pesticides, fertilizers)

Sustainable

- Build/maintain healthy soils
- Minimize off-farm inputs
- Minimize impact on environment
- Requires more managerial input
- Synthetic inputs used minimally and wisely

Challenges in sustainable programs

- No widely accepted definition
- No nationally defined standards
- Disagreement over which practices are sustainable
- No widely recognized certifying agencies for sustainable agriculture

Foundations of sustainable winegrowing program

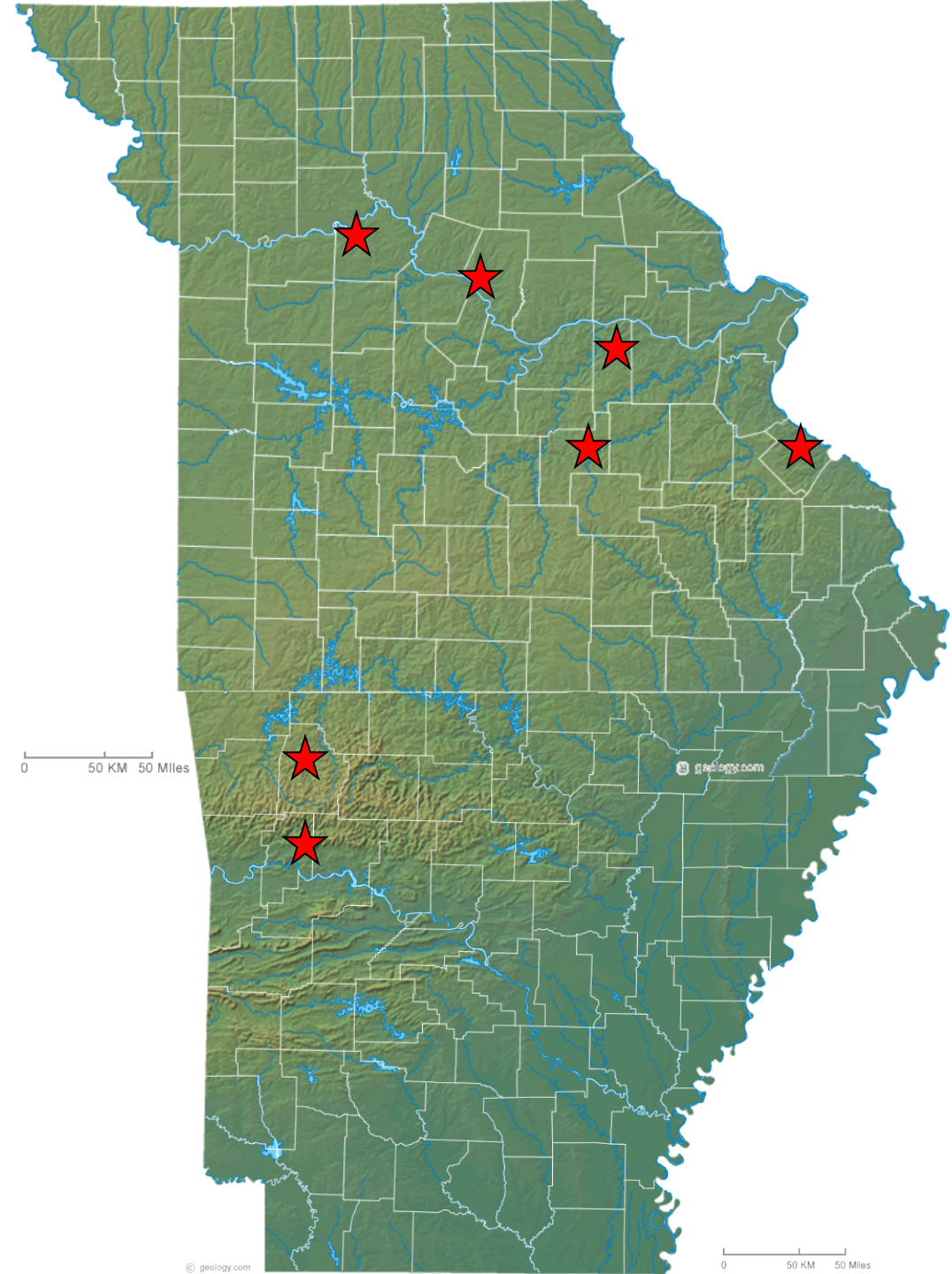
- Knowledge!!
- Use of improved practices
 - Scouting
 - Canopy management
 - Sprays based on insect/disease phenology
 - Nutrition based on actual needs
 - Cover crops
- Irrigation
- Rootstocks
- Certified disease-free vines (where/when available)

MU/UA Vineyard BMP Project

- Begun in Spring 2005
- Established 6 “lighthouse” vineyards; 7th added in 2008
- Set up canopy management demonstration blocks
- Set out pheromone traps and HOBOTM temperature monitors; later replaced with Spectrum Technologies WatchdogTM 450 Vineyard Weather Stations
- Train vineyard personnel in scouting for insect pests
- BMP tailgate meetings held at each location
- Discussed/demonstrated BMP practices
- BMP benchmark survey conducted
- Developed grower self-assessment workbook for sustainable vineyard management

Personnel/Funding

- University of Missouri
 - Andy Allen, Extension Viticulturist, ICCVE - PI
 - Dr. Keith Striegler – Director, ICCVE – PI
 - Dr. Reid Smeda – Weed Research Scientist, MU - cooperater
 - Eli Bergmeier – Viticulture Research Technician, ICCVE
 - Jackie Harris – Extension Assistant, ICCVE
- University of Arkansas
 - Dr. Donn Johnson, Fruit Research Entomologist – PI
 - Barbara Lewis, Entomology Research Technician
- Funding
 - MO Wine and Grape Board
 - Viticulture Consortium – East



0 50 KM 50 Miles

0 50 KM 50 Miles





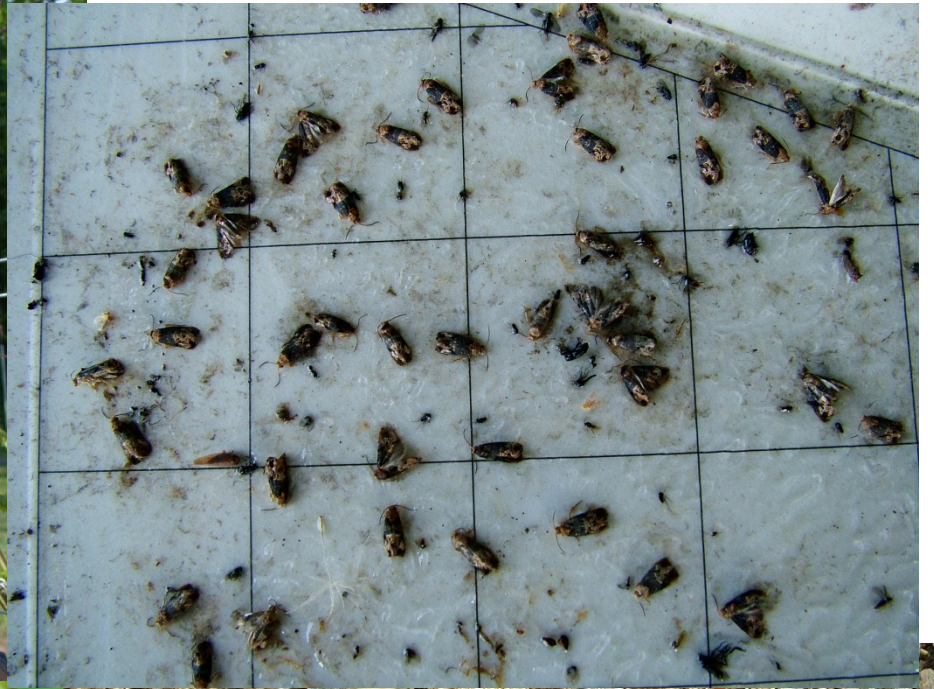


HOBO[®]
Pro Series

onset

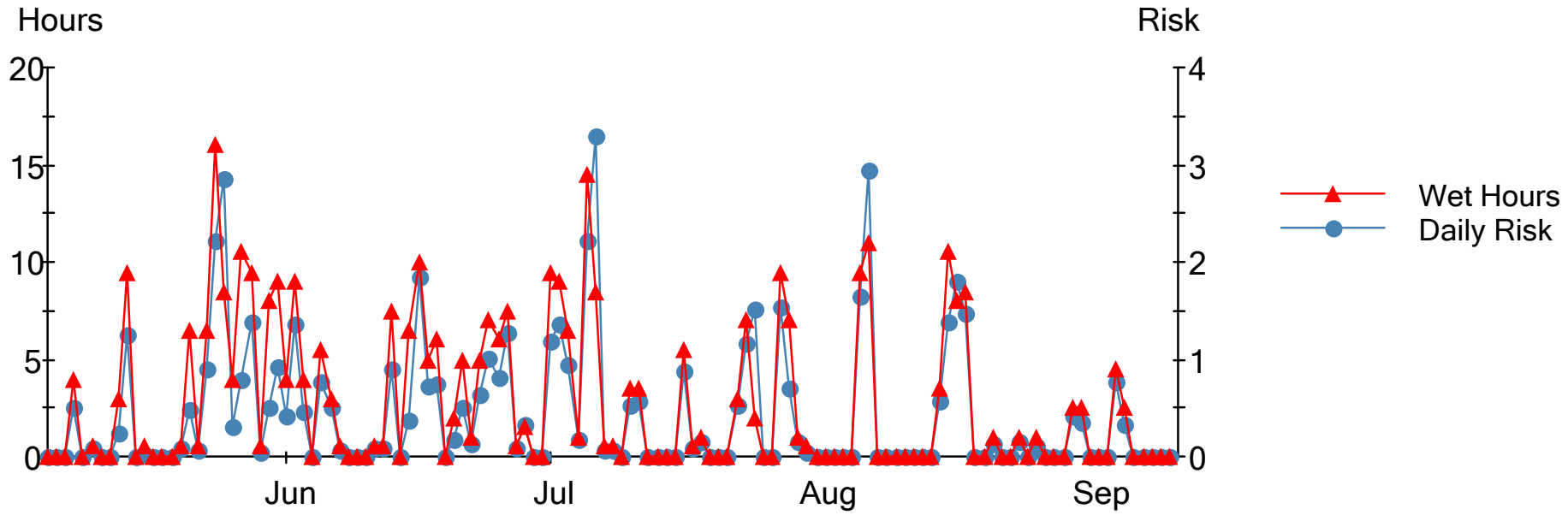
Temp
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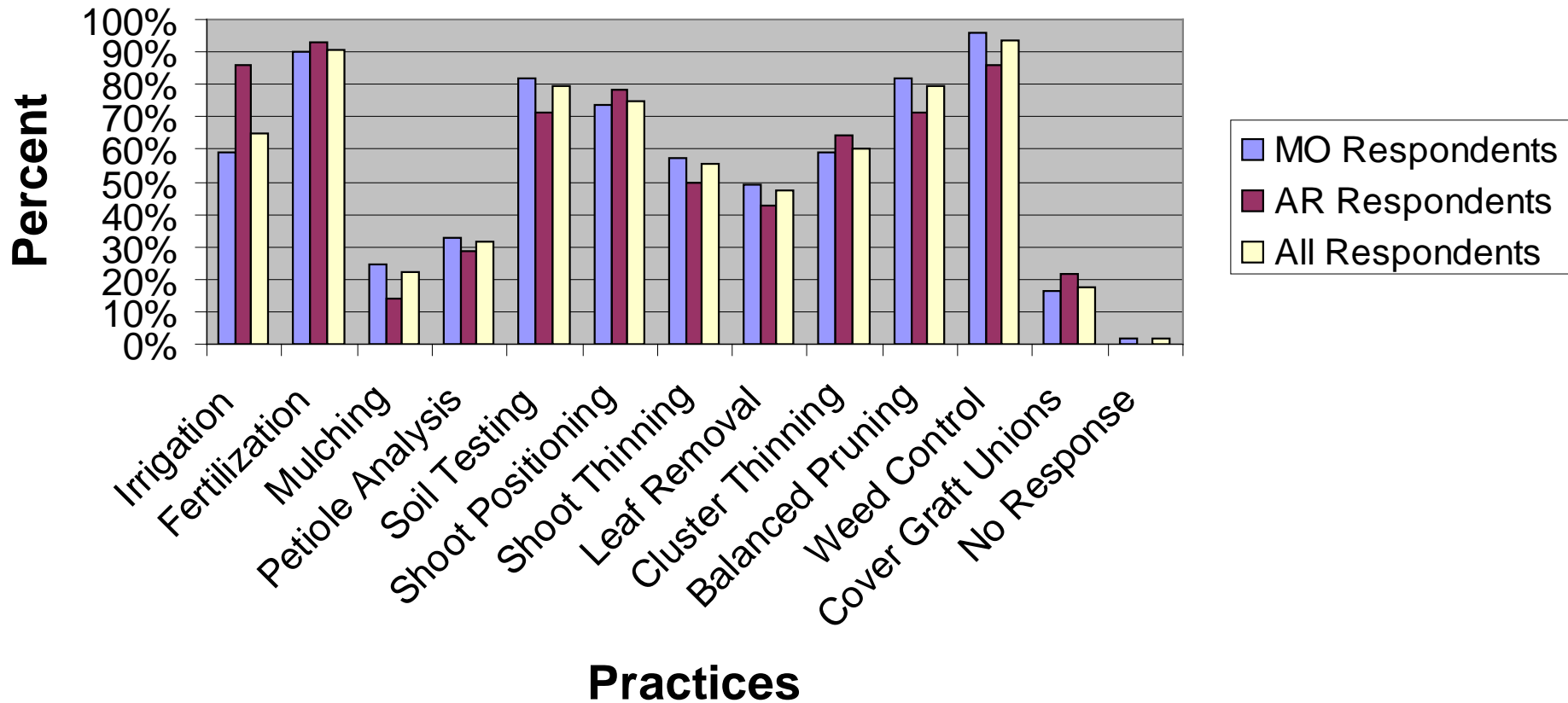




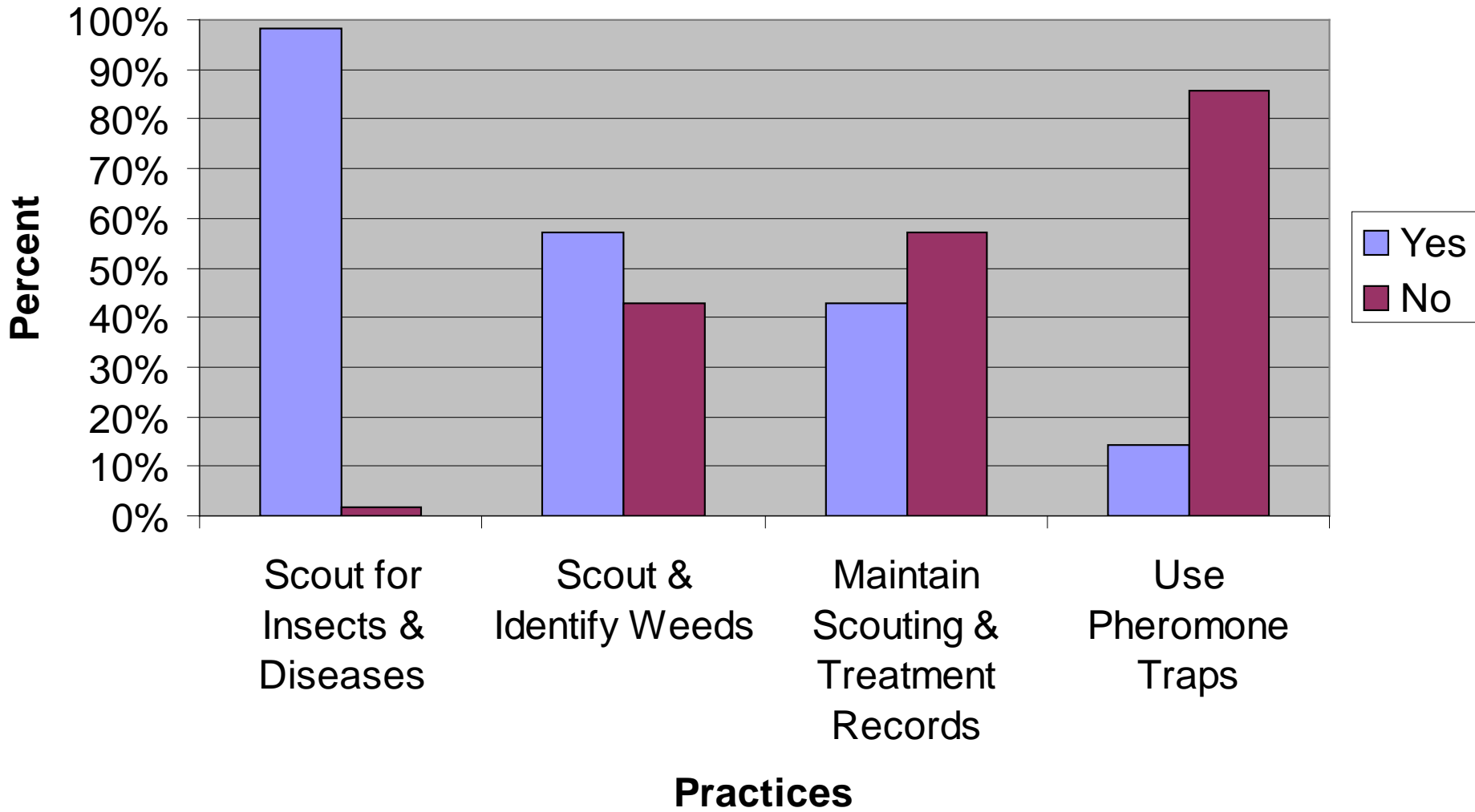
Hindsville05 - Black Rot - Grape



Survey Results - Cultural Practices



Survey Results - Scouting Activities





**Ozark Mountain Vineyard Sustainability
Assessment Workbook**
A Self-Assessment of Management Practices

Example Worksheet

Pest and damage identification				
Issue	Most sustainable	←-----→		Least sustainable
	Category 4	Category 3	Category 2	Category 1
55. What resources are used to identify insect pests and corresponding damage in the vineyard?	Vineyard manager and workers can identify insect pests and damage: symptoms and know which cultivars are susceptible to each pest.	Vineyard manager can identify insect pests and damage symptoms but workers use posted color photo fact sheets.	Only the vineyard manager can identify cause of fruit or foliar damage.	No one can identify the major insect pests or damage that each causes.
<p>Notes: <i>(Write notes to yourself about how this issue affects your farm.)</i></p>				

Using the workbook

- Read the 4 categories and decide which one best fits how you deal with this issue
- Go to Summary Evaluation Sheets and check appropriate box for this issue
- If you plan to change how you deal with this issue go to the Action Plan and describe how you will implement a higher-ranked category

XI. Pest Management (PM)

Issue	Page no.	Category				NR
		4	3	2	1	
55. What resources are used to identify insect pests and corresponding damage in the vineyard?	45					
56. Is the vineyard sampled for presence of insect pests and/or damage?	45					
57. Do sampling and economic threshold-based decision-making protocols justify insecticide applications?	46					
58. Is grape phylloxera management used to minimize damage to leaves and/or roots?	48					
59. Is grape scale damage prevented by applying spot sprays?	48					
60. Are grape berry moth infestations controlled with spot spray insecticides?	49					
61. Are reduced-risk biopesticides or organic-approved compounds applied to manage pests?	49					

ACTION PLAN

Worksheet topic	Issue number	Area of concern	Plan of action	Timetable for action

Recommended sustainable winegrowing practices

- Pest management
 - Scouting as basis of pest management program
 - For insects, diseases, weeds
 - Should be able to ID common diseases, insect pests, weeds
 - No need to spray for something that isn't there
 - Is damage likely to reach economic threshold?
 - Spray program
 - Based on phenology of insects/diseases combined with scouting

Recommended sustainable winegrowing practices

- Pest management
- Canopy management – purpose is to create more open canopy with improved microclimate in fruiting zone
 - Balanced pruning
 - Shoot thinning
 - Shoot positioning
 - Leaf removal
 - Hedging
 - Crop load adjustment

Recommended sustainable winegrowing practices

- Pest management
- Canopy management
- Vineyard nutrition management
 - Apply nutrients on as need basis based on soil/petiole sampling

Vineyard sustainability workbooks

- Ozark Mountain Vineyard Sustainability Workbook – <http://extension.missouri.edu/explorepdf/winegrape/wg2000.pdf>
- NY Guide to Sustainable Viticulture - www.vinebalance.com
- Lodi Winegrower's Workbook
- California Code of Sustainable Winegrowing Workbook – www.sustainablewinegrowing.org/docs/California-Code-of-Sustainable-Winegrowing-3rd-Edition.pdf