



**Certification of Sustainable Farming Practices**

**Safer Alternatives to Pest Control in Agriculture:  
Barriers constraining growers in their choice of safer pest  
management alternatives**  
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## Presentation Outline

- **A major barrier to adoption of IPM**
- **Who/what is the Lodi Winegrape Commission**
- **How to get around the barriers**
  - Lodi's Sustainable Winegrowing Program
  - Lodi Winegrower's Workbook
  - Lodi Rules for Sustainable Winegrowing



## Barriers to Implementing IPM

- **Perception of unacceptable risk drives spray decisions**
- **Key is to determine if perceived risk is real risk**
- **How is this done?**
  - Quantitative pest monitoring
  - Establish economic thresholds
  - Make data driven pest management decisions

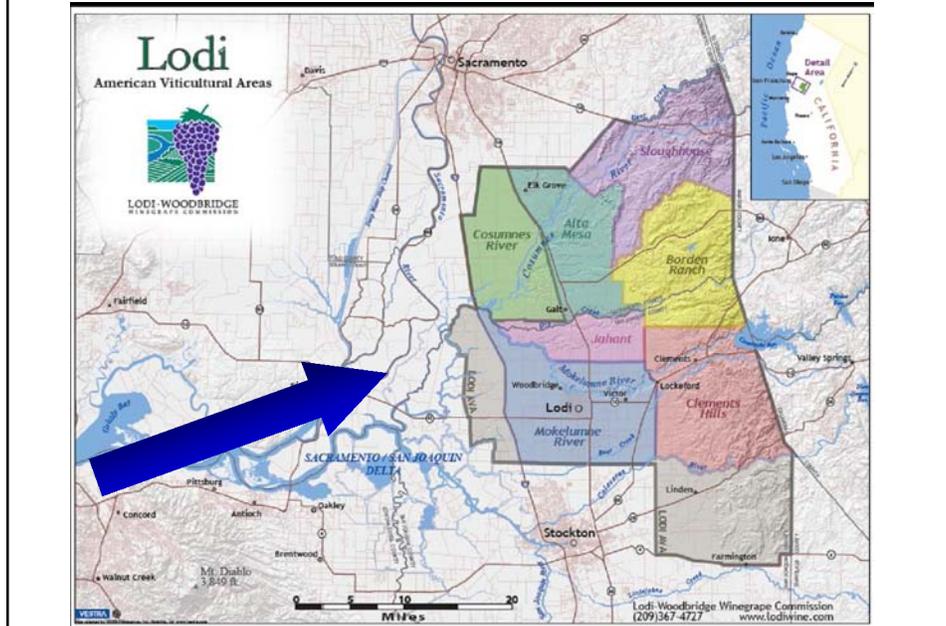


## What is the Lodi Winegrape Commission (LWC)?

- **All 750 Growers in Crush District #11**
- **Voted in by growers in 1991**
- **Funded by assessment of grape crop**
- **100,000 acres of winegrapes - 20% of CA production**
- **North America's leading producer of Cabernet Sauvignon, Merlot, Zinfandel, Sauvignon Blanc, and Chardonnay (farmgate value \$US250 Million/year)**



## Location of Lodi AVA:

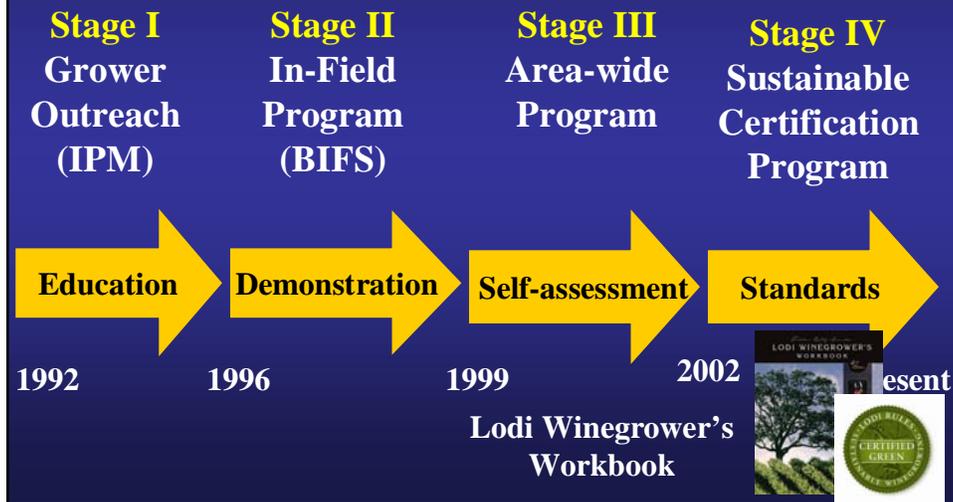


## Why was LWC formed?

- Market Lodi as a producer of premium winegrapes and wine
- Fund viticulture research to solve local problems
- To develop an area-wide sustainable winegrowing program starting with IPM



## Evolution of LWC's Sustainable Winegrowing Program



### Stage III. Lodi Winegrower's Workbook: A self-assessment of integrated farming practices

#### What does a grower self-assessment accomplish?

- *identifies good farming practices being done*
- *identifies farming practices that are of concern from an environmental and/or wine quality perspective*
- *development of action plans to address these concerns*
- *set time table to carry out action plans*

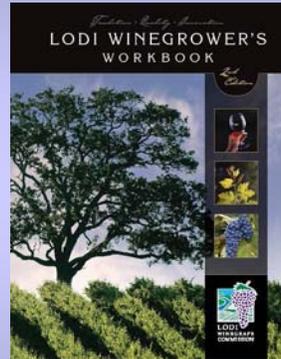
It is a tool for Defining,  
Implementing, and Measuring  
Sustainable Viticulture



## Lodi Winegrower's Workbook 2<sup>nd</sup> Edition Content

- Introduction
- Ecosystem Management
- Vineyard Establishment & Replanting
- Viticulture
- Soil Management
- Water Management
- Pest Management (IPM)
- Human Resources Management
- Shop & Yard Management
- Wine Quality & Customer Satisfaction

Defined 160 Critical Issues



= whole farming system approach



## Example Issue From Pest Mgt Chapter

### Format of Self-Assessment Workbook Worksheets

6.29 Minimizing environmental impact of pesticides			
Category 4	Category 3	Category 2	Category 1
I use the LWWC PEAS <sup>1</sup> model in choosing pesticides to use in my vineyard <i>And</i> I do not use any pesticide with more than 3 EIU's <sup>2</sup> per treatment <sup>3</sup> <i>And</i> My pesticide EIU's for the year for all pesticide applications in the vineyard does not exceed 20 units.	I use the LWWC PEAS <sup>1</sup> model in choosing pesticides to use in my vineyard <i>And</i> I do not use any pesticide with more than 7 EIU's <sup>2</sup> per treatment <sup>3</sup> <i>And</i> My pesticide EIU's for the year for all pesticide applications in the vineyard does not exceed 35 units.	I use the LWWC PEAS <sup>1</sup> model in choosing pesticides to use in my vineyard <i>And</i> I do not use any pesticide with more than 11 EIU's <sup>2</sup> per treatment <sup>3</sup> <i>And</i> My pesticide EIU's for the year for all pesticide applications in the vineyard does not exceed 50 units.	I thought PEAS was something you ate for supper.  <b>PEAS = Pesticide Environmental Assessment System</b>



## Example Evaluation Sheet from Pest Management Section

Issue	4	3	2	1
6.24 Herbicide leaching potential	✓			
6.25 Timing of treatment for perennial weeds			✓	
6.26 Area of vineyard treated with herbicides		✓		
6.27 Vertebrate pest management	✓			
6.28 Encouraging vertebrate predators			✓	
6.29 Minimizing environmental impact of pesticides				✓



## Example Action Plan

ACTION PLAN				
WORKBOOK SECTION	ISSUE NO.	ISSUE & AREA OF CONCERN	PLAN OF ACTION	TIMETABLE
Pest Mgt Chapter	6.29 on pg 254	Minimizing environmental impacts of pesticides:  Cat. 1. I thought PEAS was something you ate for supper	Move to Cat. 3 Using the PEAS model – not using a pesticide with more than 11 EIU's and keeping the total EIU's for the year below 50	Start next growing season

## How is the workbook program being implemented?

Hold workbook workshops at growers' homes throughout the district since 2000:

- From Jan 2000 to Jan. 2002 40 workshops were attended by 255 growers farming 63,000 acres
- From May 2002 to the present 100 growers farming 40,000 acres have been through the workbook a second time
- Database was created to summarize vineyard evaluations for growers willing to share them



## The Lodi Rules for Sustainable Winegrowing – What Is It?

- California's first peer-reviewed sustainable winegrowing standards
- It supports LWC's goal to continually improve Lodi's reputation for quality grapes & wine
- It is a voluntary program open to all LWWC growers to certify vineyards as sustainable
- Certified by Protected Harvest, an organization with Consumers Union's top rating



## Reasons for individual grower – Financial Benefits?

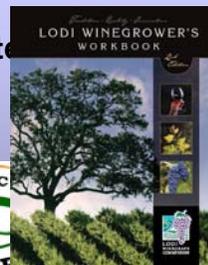
- **Increased grape prices!!!**
  - Michael-David Vineyards paying a \$50 per ton bonus for certified grapes
- **10% Reduction on Insurance Premiums**
  - Pan American Underwriters
- **New winegrape contract?**
- **Increased wine sales?**



## Origins of The Lodi Rules

Grower committee was formed in April 2001 to review value added programs in US & elsewhere and concluded:

- Third party certification program provides most credibility
- Base program farming standards on the *Lodi Winegrower's Workbook*
- Healthy Grown® certified by Protect Our Harvest as best certification model



## What is the Protected Harvest Model?

### To be Certified a Vineyard Must:

- Exceed a minimum number of sustainable farming practices points
- Not exceed a maximum number of environmental impact units from pesticides (synthetic and organic) used in the vineyard



Crop-specific  
locally focused  
standards



## Pesticide Environmental Assessment System or PEAS

- Model Developed by Dr. Chuck Benbrook
- Calculates environmental impact units for each pesticide Active Ingredient used in Lodi
- EIU's are a direct measure of environmental impact
- EIU's can be added up to calculate total impact of all pesticides used on each vineyard acre per year



## PEAS is a Multi-attribute Model

**PEAS EIU is made of the following indices:**

- Worker exposure
- Acute toxicity to birds
- Acute Toxicity to Daphnia (measure of water quality)
- Acute toxicity to Bees
- Dietary risk e.g. residue ingestion

Data to calculate indices were from EPA, USDA and University Studies



Pesticide	Index
Lorsban	173.00
Nexter	50.00
Copper Hydroxide	7.00
Neem Oil	5.00
Provado	3.00
Cryolite	2.94
Sulfur Dust	2.37
Omite	2.05
Surround	1.45
Roundup	0.39
Kaligreen	0.39
Rally	0.32



### Pesticide Impact Units for 'Typical' Lodi Vineyard for a Year

Input Date	Chemical Name	Rate/Acre	Impact Units/Acre
4/13/2004	Sulfur dust	15 lbs	2.94
4/22/2004	Sulfur dust	15 lbs	2.94
5/3/2004	Sulfur dust	15 lbs	2.94
5/13/2004	RoundUp Ultra Dry	0.92 lbs	0.03
5/16/2004	Sulfur dust	14 lbs	2.74
5/29/2004	Sulfur dust	15 lbs	2.94
6/2/2004	Rally 40W	3.88 ozs	0.34
6/24/2004	Provado	0.63 ozs	1.91
6/24/2004	Acramite 50 WS	0.87 ozs	0.65
6/24/2004	Pristine	11.49 ozs	0.20
7/28/2004	Gramoxone Max	1 pint	0.09
7/31/2004	RoundUp Ultra Dry	0.63 lbs	0.02
Total Impact Units per Acre for Year			17.75

## Sustainable Winegrowing Practices Standards

- Ecosystem management - 12
- Education, Training & Teamwork
- Soil Management - 13
- Water Management - 11
- Vineyard Establishment
- Pest Management - 18

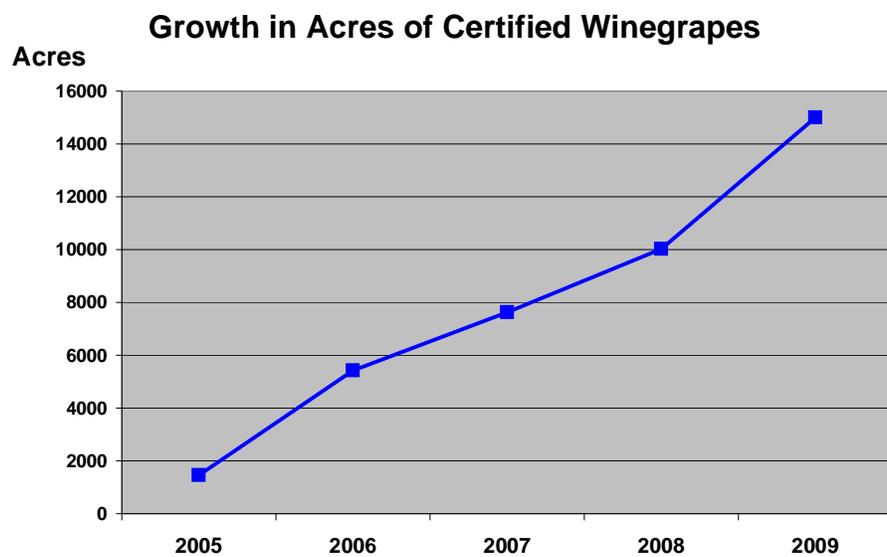


## Requirements for Displaying Lodi Rules Logo on Wine Label

- 85% or more of wine must be from certified grapes
- Winery must be certified by Protected Harvest for chain of custody compliance



## Lodi Rules Program Growth



# Winery Participation

**Wineries with TTB Approved Labels:**  
**Lobo Loco Winery**  
**Herzog Wine Cellars**  
**Lange Twins Wine Estates**  
**Bokisch Vineyard & Winery**  
**St. Amant**  
**Valhalla Cellars**



# Financial Supporters of The Lodi Rules

- US EPA Region 9 - \$80,000
- The Great Valley Center - \$10,000
- State Water Resources Control Board - \$380,000
- USDA Value Added Grant Program - \$140,000



## Important Features of the Lodi Rules Program

- Use of pesticide impact model
  - Science-based farming standards
  - Focus is on quality
  - Emphasis on measurement and record keeping (if you can't measure it you can't manage it)
  - Certifies all aspects of winegrape growing
  - Each vineyard gets certified individually
- Improvement over time is part of model



Lodi Wine & Visitor Center

