

Sustainable Practices Program Development Scoping & Needs Assessment

December 19, 2007

FINAL PROJECT REPORT

Andrew Arnold, MS and Jeff Dlott, PhD
SureHarvest

Holly A. King
Great Valley Center

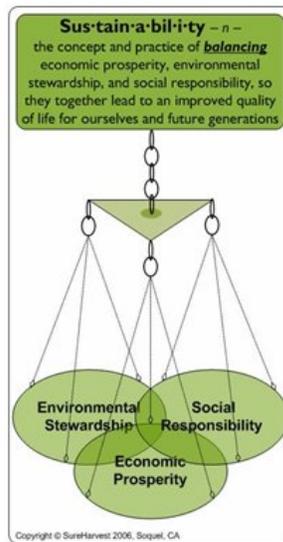


TABLE OF CONTENTS

Abstract.....	1
Introduction	1
Best Practices Benchmark Survey	3
Survey Response and Demographics.....	3
Practice Area Results	4
Survey Conclusions.....	11
Industry Focus Group Meeting.....	12
Program Benefits and Costs	13
Program Development and Implementation	13
Relative Priority of a Program	14
Outside Interest in Program.....	15
Financial Support for Program.....	15
Meeting Outcomes.....	15
Sustainable Program Management Platform.....	18
Conclusions and Recommendations.....	23
Acknowledgements	24
APPENDIX 1: Sustainability Definitions & Programs.....	25
APPENDIX 2: Survey Written Comments	26
APPENDIX 3: Workshop Participants.....	28

Abstract

The California pear industry is working to address the increased marketplace and regulatory prominence of environmental, social, and economic concerns, a process similar to that of other agricultural commodity groups.

A best practices benchmark survey was developed to cover the following areas: market trends, pest management, water use, nutrient management, energy use, human resources, and neighbor/community practices. The survey was mailed to 67 growers with a response rate of 36% representing approximately 60% of the industry acreage. Survey results showed that, overall, California pear growers compared favorably in their performance level to their peers in Washington and Oregon and other pear growing regions in the United States. Strengths included: IPM, on-farm vegetation and natural resource management practices, and water management practices.

An industry focus group meeting bringing together growers, shippers, processors, and UC researchers determined that growers are interested in a “go-slow,” phased implementation of a best practices program utilizing as many existing publicly available best practice assessment tools and seek assistance from UC resources to develop additional tools. Industry leaders expressed interest that eventually an integrated web-based tool to manage a program would be ideal. To capitalize on economies of scale, growers were interested in exploring collaboration with other like-minded commodity groups to develop a set of best practices assessment tools for commonly used practices. Growers were also enthusiastic about pursuing a communication campaign to publicize their “good story” about historic activities and investment to develop a strong industry-wide IPM program.

Recommended next steps for the industry around a best practices program include: identification of an industry leadership team, conduct a strategic planning exercise to prioritize resources and objectives to pursue a program, seek collaboration with other commodity groups, and develop a plan for implementing the program. In a separate recommended path, industry leadership can scope, research, and determine a plan to develop a “good story” communications campaign.

Introduction

In this era of increasing pressures on agricultural producers due to globalization, rising input costs, food safety events, higher levels of transparency of production practice information, the California pear industry is looking for methods to keep the industry “sustainable.” The industry is also trying to determine how to react to a rapidly evolving market and regulatory environment driven by environmental, social, and economic concerns. Three forces acting on the industry are:

Regulatory Compliance

- Meeting existing & evolving regulatory requirements

Regulatory/Financial Incentives

- Qualifying for public/private incentives targeted at improving or recognizing sustainable practices (e.g., NRCS EQIP, Insurance, etc.)

“Commercial” Compliance

- Meeting market demands/opportunities

The California Pear Advisory Board (CPAB) and the Pear Pest Management Research Fund (PPMRF) funded a project to perform a scoping and needs assessment to explore developing an industry-defined sustainable practices program and to determine what a path forward might look like. The key question that was assessed during this project is: “Could a sustainable practices program help differentiate California pears in the marketplace and provide a framework to talk about numerous positive aspects of crop production practices that have been developed over the years.”

The project objectives were to survey growers on current best management practices, bring together industry stakeholders to discuss the relative priority of a sustainable practices program, begin to outline the potential leadership, technical expertise, and financial resource commitment needed to pursue a program. Figure 1 depicts an integrated methodology used to design, develop, and implement sustainable practice programs where Phase 1 is designed to provide decision points for an organization on whether or not they should proceed with an initiative. This project combined steps 1 and 2.

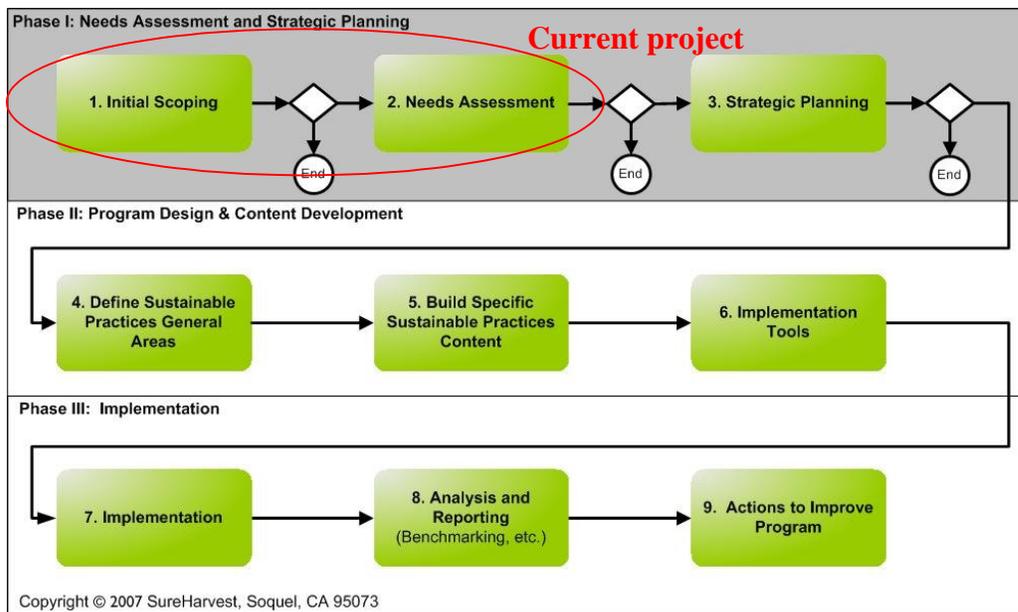


Figure 1 – Sustainable Practice Program Development Methodology

One of the very first issues in Phase 1 is addressing the question “What is sustainability?” With concepts such as organic, local, sustainable, natural, biodynamic, carbon neutral, etc. bombarding the minds of consumers, it is important to address this

question at the start of the feasibility and assessment phase to insure that growers and processors are working toward their own common understanding of what sustainability means for the industry. . While many definitions of “sustainability” exist (see Appendix 1), the following definition was used as a beginning working definition:

“The concept and practice of balancing economic prosperity, environmental stewardship, and social responsibility, so they together lead to an improved quality of life for ourselves and future generations.”¹

The following report summarizes the findings of the industry best practices benchmark survey and the industry focus group meeting and suggests next steps to move forward.

Best Practices Benchmark Survey

During preliminary project discussions, it was clear that California pear growers felt that they had a “good story” to tell about their historical development of IPM programs and other environmentally friendly practices. This goal, combined with benchmarking being an integral part of any best practices program, led to the development of a best practices benchmark survey that was distributed to all pear growers. Areas covered in the survey included: market trends, pest management, water use, nutrient management, energy use, human resources, and neighbor/community practices.

In order for the growers to see how they measured up to other pear growing areas and other crops, several public and proprietary commodity best practice surveys were used to document how the California pear industry is positioned relative to the other commodities and to determine where the industry is on a sustainable practices continuum. The sources are cited in the tables in which they appear.

Survey Response and Demographics

The following describes the response statistics and demographic information for the survey.

Survey Response

- Surveys were mailed out in late September, 2007 to the 67 growers that comprise the California pear industry (list provided by Bob McClain of CPAB)
- 24 surveys were returned over a 41 day period (~36% response rate)²
- Response by region: 11 – Early, 13 – Late Season
- Respondents either owned or managed 5,961 acres of pears (representing almost 60% of the estimated industry total acreage). Size ranged from 20 to 1,300 acres, with an average operation size of 248 acres.

¹ Dlott, J., Gunders, D. & Arnold, A. 2006. Sustainability Trends in the Agrifood Sector. SureHarvest Briefing Paper, SureHarvest, Soquel, California

² The focus group participants indicated that the 60% acreage response rate was more important than the 36% population response rate in terms of interpreting the results.

- Three respondents owned/managed a packing facility
- Nine respondents were only orchard owners, five were only orchard managers, and ten both owned and managed orchards

Respondent geographic distribution by county (can be multiple):

Lake	Mendocino	Sacramento	San Joaquin	Sutter	Yuba
6	7	10	0	1	2

Other Crops Grown

The majority of survey respondents also grow or manage at least one other crop as shown in the following table:

Crop	Number
Winegrapes ³	12
Cherries	6
Walnuts	4
Apples	3
Grains & alfalfa	2
Peaches	2
Kiwis	1
Persimmons	1
Blueberries	1
Plums	0
Almonds	0

Practice Area Results

The survey questions were grouped into a number of practice areas. The following sections discuss the results of each section.

Market Trends

Two significant market trends for fruit and vegetable products are organic and best management practice certified. The following describes how those trends are affecting pear growers.

Organic Pear Growing

- Five respondents had organic acreage varying from 5 to 100% of their total pear acreage

³ Those growers who also grow winegrapes are either involved in sustainable winegrowing programs (three stated they are in the Fish Friendly Farming program) or have probably had exposure to various California sustainable agriculture practice programs. These growers are located in Lake and Mendocino counties.

- 16 out of 21 respondents are not considering getting any orchards certified in the next 3-5 years
- Only 3 respondents who currently have no organic acreage are considering getting one or more orchards certified in the next 3-5 years

Buyers Request for Best Management Practice Information

16 out of 24 respondents have had a request by processors, packer/shippers, retailers, or foodservice companies for BMP information

Buyer activity in order of requests (i.e., most requests are from processors):

- Processors
- Retailers
- Packer/shippers
- Foodservice

92% of the respondents send pears to a processor

Pest Management

The following tables show survey results for questions pertaining to pest management practices. The California pear industry has a history of innovative approaches to pest management and has been at the forefront of Integrated Pest Management (IPM) initiatives.

Statistics Tables Notes

- “Best” scores are highlighted in green.
- References to other surveys used for comparisons are cited in appropriate tables.
- Observations on the results follow each table.
- Given the time span since the comparative surveys in Tables 1-7 were conducted, relative differences between this survey may be smaller.

Table 1. Question 1 Results – IPM Practices

IPM Practices	CA	WA (2000)⁴	OR (1996)⁵	
Economic/treatment thresholds	100%	68%	73%	1b
Degree day models to time sprays	100%	77%	75%	1d
Pheromone traps	100%	78%	72%	1g
Reduced pesticide rates	96%	67%		1f
Biological control	83%	64%		1c
Alternate row middle spraying	78%	38%		1a
Integrated mite management	68%	64%		1e

⁴ Brunner, J.F., Jones, Wendy, Beers, Elizabeth, Dunley, John. 2001. Survey of IPM Practices in Washington Tree Fruit. Department of Entomology, WSU- Tree Fruit Research and Extension Center.

⁵ Coop, L.B. 1998. Oregon pear growers survey (online database analysis system). Oregon State University Integrated Plant Protection Center. Web Site: <http://ipmnet.org/IPMsurvey/cfgph/pearsurvey.cfm>

Based upon a strong industry IPM program, California growers score favorably in IPM practices compared to their counterparts in Washington and Oregon.

Table 2. Question 2 Results – Field Monitoring Practices

Field Monitoring	N/A	Less than 1X/month	About 1X per month	Every 2 weeks	At least 1X/week
Yourself	25%	4%	4%	4%	42%
Independent crop consultant	41%	0%	0%	0%	59%
Input supplier / chemical dealer	38%	8%	0%	21%	33%

100% of CA growers monitor pests

93% of WA growers monitor pests (2000)

100% of OR growers monitor pests (1996)

Consistent with strong IPM programs, the majority of California growers have someone monitoring their orchards at least one time per week.

Table 3. Question 3 Results – Pest Management Information Practices

Pest management information	Yes	
Monitor for beneficials	100%	3a
Personally keep written or electronic monitoring records	48%	3b
Receive written or electronic monitoring records from consultant	78%	3c
Like to receive (or continue receiving) written or electronic monitoring records from consultant	85%	3d
Use a computer for pest management record keeping	83%	3e

Consistent with California’s mandatory pesticide usage reporting program, the majority of growers have written or electronic pest management records and use a computer for recordkeeping.

Computer usage in OR (1996) was 56%

Table 4. Question 4 Results – Pest Management Practices

Pest management practices	CA	Pears ⁶	Apples	Peaches	Cherries	Plums	
Use weather data	100%	83%	86%	83%	94%	87%	4b
Select pesticides w/ low toxicity to wildlife	96%	82%	82%	91%	89%	80%	4g

⁶ Haley, J., and J. Dlott., 2001. Grower survey that included multiple commodities from different geographic regions. Approximately 85 pear growers participated.

Select pesticides w/ low toxicity to fish	96%	75%	68%	74%	77%	57%	4h
Use computer forecasting models for disease mgmt	83%	42%	45%	36%	33%	33%	4a
Maintain plants & refuges for natural enemies	48%	36%	32%	26%	22%	0%	4f
Provide nesting sites for raptors	48%	22%	30%	17%	39%	27%	4c
Provide nesting sites for bats	39%	90%	90%	10%	11%	70%	4e
Provide nesting sites for other birds	22%	22%	19%	24%	35%	13%	4d

Compared to a 2001 survey of various commodity suppliers to a large baby food processor, California growers compare favorably in utilizing weather data and computer forecasting for disease management and selecting low toxicity pesticides affecting fish and wildlife.

Nesting site results may have varied due to regional management practice needs.

Land Stewardship

The following tables show survey results for important land stewardship practices in the following areas: nutrient management and soil quality, water management, and natural resource conservation.

Table 5. Question 5A Results – Nutrient Management and Soil Quality Practices

Nutrient mgmt & soil quality	CA	Pears	Apples	Peaches	Cherries	Plums	
Apply commercial fertilizers	92%	95%	95%	95%	100%	100%	5g
Conduct soil samples & lab tests	79%	70%	72%	88%	83%	87%	5a
Conduct plant samples & lab tests	79%	61%	54%	51%	72%	62%	5c
Conduct pH tests for soil amendments	74%	66%	72%	88%	83%	100%	5f
Plant cover crops	54%	60%	63%	66%	89%	71%	5b
Apply compost	25%	19%	15%	14%	39%	14%	5e
Apply manure	13%	19%	16%	9%	33%	21%	5d

While nutrient management and soil quality practices vary by crop type, California growers score well and extensively use sampling and testing to guide application decisions. A low percentage of growers apply compost or manure to their orchards.

Table 6. Question 5B Results – Water Management Practices

Water management	CA	Pears	Apples	Peaches	Cherries	Plums	
Use low volume irrigation system	50%	39%	44%	46%	78%	63%	5Bd

Have flow meters for wells/pumps	42%	9%	20%	5%	0%	14%	5Be
Record & track flow meter readings	38%	2%	6%	0%	0%	0%	5Bf
Conduct irrigation water samples	29%	7%	6%	5%	0%	0%	5Bc
Record & track soil moisture depletion	21%	7%	5%	2%	6%	0%	5Ba
Record & track evapotranspiration	21%	3%	2%	2%	0%	0%	5Bb

Overall, California growers are more sophisticated in water management practices but the majority of growers have not implemented them.

Table 7. Question 5C Results – Natural Resource Conservation Practices

Natural resource conservation	CA	Pears	Apples	Peaches	Cherries	Plums	
Maintain vegetation on water course banks for erosion control	78%	46%	79%	90%	59%	92%	5Cc
Maintain vegetation between fields to create continuous wildlife habitat	75%	57%	47%	55%	72%	40%	5Ca
Maintain vegetation in ditches, edges of driveways & edges of roadways to attract wildlife	71%	79%	45%	52%	53%	40%	5Cb
Maintain 100' buffer strip between water courses & production fields	48%	53%	50%	61%	47%	71%	5Cd

The majority of California growers have good on-farm vegetation and natural resource management practices.

Sustainable Practice Areas

The following questions addressed sustainable practice areas and were used to both compare the California pear industry to the California winegrowing industry and to illustrate how a sustainable practices self-assessment program utilizes a scale of “sustainability” (1 being lowest, 4 highest) to measure business practices. The results show that pear and winegrape growers score comparably in these areas and all have opportunities for improvement.

Q6. Energy Efficiency

Category 1	Category 2	Category 3	Category 4
I have a general idea of total energy use per year in my orchard operation.	An energy audit* of the overall orchard operation has been conducted in the last 2 years And I am using the results from the audit to make decisions on maintenance, capital improvements, and employee training.	I have developed and implemented 25% of a comprehensive energy management plan And Total energy use is monitored and recorded throughout the year And Yearly goals are set for overall energy use, energy use per ton of pears produced, and energy use for gross sales based on baseline monitoring data.	I have developed and implemented 50% of a comprehensive energy management plan And Total energy use is monitored and recorded throughout the year And Yearly goals are set for overall energy use, energy use per ton of pears produced, and energy use for gross sales based on baseline monitoring data Or Our orchard operation has demonstrated a 20% reduction in energy use from per ton production baseline.

Figure 2 – Question 6: Energy Efficiency

California pear survey average was 1.2.

California Sustainable Winegrowing Program (SWP) average is 1.3.

Q7. Solid Waste Reduction and Management

Category 1	Category 2	Category 3	Category 4
I have no idea of the total solid waste generated per year by our orchard operation.	A solid waste audit for the orchard operation has been conducted in the last 2 years And I am using results from the audit to make decisions on procurement, inventory procedures, production packaging, and employee training And Information about reducing, reusing, and recycling solid waste is easily accessible to all employees.	Our orchard operation has demonstrated a 25%* solid waste reduction from our per ton production baseline Or The total solid waste generation is monitored and recorded throughout the year And Yearly goals are set for overall solid waste reduction and solid waste generated per specific operation And Information about reducing, reusing, and recycling solid waste is part of employee training.	Our orchard operation has demonstrated a 50%* solid waste reduction from our per ton production baseline And The total solid waste generation is monitored, recorded, and posted throughout the year Or Yearly goals are set for overall solid waste reduction, solid waste generated per specific operation, and solid waste generated per ton of pears produced And Information about reducing, reusing, and recycling solid waste is part of employee training and available in Spanish.

Figure 3 – Question 7: Solid Waste Reduction and Management

California pear survey average was 1.2, SWP average is 1.8.

Q8. Human Resources

Category 1	Category 2	Category 3	Category 4
<p>My company has no plans to develop a documented company mission, vision, or values that focus on sustainability.</p>	<p>My company has a documented mission statement that includes sustainability elements And We are planning to add vision and values statements that focus on sustainability.</p>	<p>My company has a documented mission statement that includes a sustainability element, as well as a vision statement and sustainability values And These are shared with all employees (and sometimes customers) via posters, business cards, labels, printouts, etc.</p>	<p>My company has a documented mission statement that includes a sustainability element, as well as a vision statement and sustainability values And These are shared with all employees (and sometimes customers) via posters, business cards, labels, printouts, etc. And The sustainability strategy (mission, vision, and values) has been consistently implemented for at least one year and has been revised (if necessary).</p>

Figure 4 – Question 8: Human Resources

California pear survey average was 1.7, SWP average is 2.0.

Q9. Neighbors and Community

Category 1	Category 2	Category 3	Category 4
<p>I am generally not aware of neighbor and community issues And No plans are in place to investigate locally relevant neighbor issues (e.g. traffic, noise, light, air quality, agricultural and winery chemicals) And No plans are in place to investigate locally relevant community issues (e.g. housing education, transportation, health care, water supply, agricultural chemicals, smart growth) And I react to issues only when neighbor and/or community outcry demands action.</p>	<p>I am becoming aware of neighbor issues by investigating relevant concerns And I am becoming aware of community issues by investigating relevant concerns And I am investigating the development of a locally relevant outreach plan to foster an open dialogue with neighbors and the community, address concerns, and share our sustainability values And I try to react to issues before neighbors and/or the community demand action.</p>	<p>I have researched and am aware of and conversant in relevant neighbor and community issues And I am implementing a locally relevant outreach plan that includes prioritized issues And I have participated in one or more appropriate community forums that addressed a significant neighbor or community issue And I try to be proactive by addressing issues before neighbors and/or the community demand action.</p>	<p>I am knowledgeable of and conversant about relevant neighbor and community issues And I continue to implement a locally relevant outreach plan that includes prioritized issues And I use neighbor and community input to improve the outreach plan And I actively participate in appropriate community forums that address significant neighbor or community issues And Our outreach and communication goals are established and tracked annually to ensure continuous improvement and that sustainability information is publicly available And I am proactive by making information on potential issues available before the public demands action.</p>

Figure 5 – Question 9: Neighbors and Community

California pear survey average was 2.2, SWP average is 2.3.

Q 10. Air Quality

Category 1	Category 2	Category 3	Category 4
<p>I have a general idea about some sources of air emissions associated with my orchard</p> <p>And</p> <p>I do not know the difference between PM10 and PM2.5 particulate matter</p> <p>And</p> <p>I do not consider air and climate protection when designing an orchard.</p>	<p>I am aware of some sources of air emissions associated with my orchard</p> <p>And</p> <p>I have a general idea of the difference between and sources of PM10 and PM2.5 particulate matter</p> <p>And</p> <p>I am assessing sources and impacts of emissions from my orchard</p> <p>And</p> <p>I will use results to support decisions for process and technology improvements</p> <p>And</p> <p>I plan to investigate options for air and climate protection when designing an orchard.</p>	<p>I am aware of sources of air emissions associated with my orchard</p> <p>And</p> <p>I understand the difference between and sources of PM10 and PM2.5 particulate matter</p> <p>And</p> <p>I am aware of resources for air quality information</p> <p>And</p> <p>Emission sources are identified and annual emissions estimated (where feasible)</p> <p>And</p> <p>Goals and reduction targets are set for air and climate protection</p> <p>And</p> <p>Employee training in air and climate protection is provided</p> <p>And</p> <p>I include air and climate protection when designing a vineyard or winery.</p>	<p>I am knowledgeable about sources of air emissions associated with my orchard</p> <p>And</p> <p>I understand the difference between and sources of PM10 and PM2.5 particulate matter</p> <p>And</p> <p>I regularly use resources for air quality information (e.g. Air Quality Index, regional web sites)</p> <p>And</p> <p>Emission sources are identified and annual emissions calculated (where feasible)</p> <p>And</p> <p>Yearly goals and reduction targets are tracked for air and climate protection</p> <p>And</p> <p>Employees are trained in air and climate protection and training includes written material</p> <p>And</p> <p>I include air and climate protection when designing an orchard.</p>

Figure 6 – Question 10: Air Quality

California pear survey average was 1.9, SWP average is 1.8.

Written Comments

The survey also included an area to write in comments or suggestions about the California pear industry pursuing a sustainable practices program. (See Appendix 2 for actual comments.)

The growers' comments generally fell into the following categories:

- Need a good definition of sustainability with the economic leg being critical
- What is the payback for participating in a sustainable practices program?
- Documenting our IPM practices and progress is a good thing
- Why should we participate in multiple sustainable practices programs?

Survey Conclusions

This being the first survey of its kind for California pear growers, it will serve as a baseline for future surveys to measure changes in individual practices. However, based upon the survey results it is clear that the California pear industry is well positioned to tell a great story! As growers stressed in pre-project meetings and in discussions during the project, the industry has been diligent in funding many research and development activities to address pest management and other environmental issues and should be recognized for this achievement.

The following conclusions can be drawn from the survey:

- IPM is a core strength with the vast majority of growers using IPM practices
- The majority of California growers have good on-farm vegetation and natural resource management practices.
- The reported adoption rate of water management best practices was less than the majority of growers.
- Regional differences in certain practices (e.g., erosion control) will necessitate region-specific best practices.
- California pear growers compare favorably to California winegrowers on energy, waste management, human resources, neighbors and community, and air quality practices. All are in the early awareness stage of the continuum.
- Organic pear acreage is relatively low and most growers do not foresee transitioning to organic practices.
- Pear growers typically grow or manage other crops and may be exposed to sustainable practice programs for those crops.
- Growers are concerned with the economic benefits of participating in a sustainable practices program and view it being “extra work.”
- The majority of growers have been asked by numerous customers about their best management practices.
- Growers are confused and frustrated by the number of sustainability certification programs that might impact them.

Overall, pear growers appear to be in a good position on a sustainability continuum and would benefit by documenting this for the industry.

Industry Focus Group Meeting

In order to discuss the concept and need for a sustainable practices program, all 67 pear growers were invited to participate in a one-day industry focus group meeting. Pear processors and University of California researchers were also invited.

The agenda for the meeting included the following topics:

- Review the best practices benchmark survey results as they relate to developing a sustainable practices program;
- Determine the relative priority of pursuing an industry-wide sustainability program;
- Explore the level of interest of industry leaders to participate in the design, development and implementation of a program;
- Explore the level of interest of university and other public sector technical experts to contribute to a program; and
- Discuss the potential level of financial resources that could be available to support a program

Eleven growers (two who also pack fresh pears), five UC researchers, and three pear processors attended the meeting. (See Appendix 3 for the list of participants.)

Program Benefits and Costs

The potential benefit areas of implementing an industry-wide sustainability program were described as follows:

Public Relations

- It would represent a proactive, grower-led initiative
- It would provide a framework to tell the industry's good story about pest management and environmental practices

Industry Capacity

- Experience and expertise resulting from design, develop and implementation of a sustainable practices program

Conservation Practice Funding

- The USDA offers NRCS Environmental Quality Innovation Program (EQIP) and Conservation Security Program (CSP) cost-sharing programs with the potential of additional programs in the upcoming Farm Bill
- The UC IPM program may cooperate in funding

Private Incentives

- Some crop insurance and financial lending organizations are looking at growers who participate in sustainable programs as "lower risk" clients and offer discounts

Market Incentives

- Certain retailers and foodservice companies are offering contracts for sustainably produced crops
- Branding opportunities exist for sustainable products in the marketplace

The potential cost areas for implementing an industry-wide sustainability program were described as follows:

Time Commitment

- CPAB management and staff
- Growers
- UC resources or other outside consultants

Financial Investment

Industry Knowledge and Expertise

These industry investment decisions would also need to be weighed against other opportunities such as continued pest management or other industry research projects.

Program Development and Implementation

While few industry-wide sustainable practice programs have been implemented to date, SureHarvest has had experience in developing several. The methodology presented in Figure 1 includes a program design and development phase (Phase II) and an implementation phase (Phase III). The following information was presented to focus

group participants to provide a context for them to discuss the relative priority of pursuing a program.

Program Development

- Requires the coordination of industry leaders, technical expertise, and outside stakeholders (e.g., NGOs, regulatory agencies)
- May require 8-12 months of time
- May require \$150,000 to \$200,000 to develop the content
- May require \$50,000 to \$200,000 for the tools to implement the program (paper-based on the low end and electronic platform on the high end)

Implementation

- May require several years to implement fully based upon the annual crop year cycle and participation commitment level
- Costs would depend on who does it – CPAB vs. outside contractor

Interestingly, there was no strong opinion one way or the other on needing to have a certified practices program for California pears. The pros and cons of certification should be discussed further in the future.

Relative Priority of a Program

One of the key objectives of the group meeting was to determine the priority of pursuing an industry-wide sustainable practices program. Given other competing industry issues and opportunities, where is it best to invest leadership, technical expertise, time and money? As determined in the survey, there is increasing pressure from processors, packers, retailers, and foodservice companies to document best management practices. Should the industry continue to react to these “outside” programs or develop one of their own?

The following are potential industry-wide opportunities:

- Address regulatory pressures
 - Pesticide, water, air, endangered species, etc.
- Address production issues
 - Pest management, horticulture, labor, etc.
- Leverage available program options and alternatives
 - “Buy California” marketing campaign approach
 - Existing sustainable programs may be “good enough”
 - Sustainable Winegrowing Program, Fish Friendly Farming, The Food Alliance, Protected Harvest, etc.
- Execute a pear-specific proactive, grower-led initiative to design, develop and implement a sustainable practices program

Outside Interest in Program

Critical to developing an industry sustainable practices program is engaging technical and subject area expertise from outside the industry. These groups create a broad perspective on the environmental, social, and economic aspects of the program and ensure a well-rounded set of practices. There is currently a heightened awareness of these programs and a willingness by external stakeholders to participate in commodity group initiatives.

The following groups would be helpful to include in the program development phase

- University Research and Extension
 - UC Cooperative Extension
 - UC IPM
 - UC SAREP, UCD Agricultural Sustainability Institute
 - Cal State Universities
 - Others
- USDA NRCS
- Regional Conservation Districts
- Air Quality Control Boards
- NGO's
 - Sustainable Conservation, others

Financial Support for Program

Financial resources are another critical component of developing and supporting a sustainable practices program. Industry leadership needs to determine potential internal and external funding and cost-sharing sources and the potential level of each.

The following sources should be explored:

- Industry
 - Tonnage/acreage assessments
 - Grower or shared fees
 - Research program funds
- Grants
 - CDFA
 - USDA – NRCS Conservation Innovation Grants
- Private Foundations
 - Environment plus agriculture oriented
- Cooperative effort with other crop groups
 - Economies of scale for similar, common practices

Meeting Outcomes

The relative priority, outside interest, and potential financial resources were discussed by the growers, processors, and UC researchers.

Strategic issues that were discussed and need to be resolved in a next strategic planning phase (see Next Steps in the Conclusions and Recommendations section) included:

- Should this be an industry level versus a grower level program? Should the goals be scaled back to provide simple tools aimed only for grower use?
- What is the scope of a program – California only or could it be for “West Coast” pears? (this was more from a cost-sharing perspective and not from a market differentiation perspective)
- What percentage of industry research funding, if any, should be allocated to the development of a program?
- How would a sustainability program address the economic “leg” of sustainability and incorporate the economic challenges of crop production in the supply chain – relatively flat farmgate revenue over time when compared to increasing farming costs and increasing gap between retail value-add prices and growers’ value contribution?

Based upon SureHarvest’s estimates on the costs and leadership commitment to develop and implement a sustainable practices program, the growers discussed several “low-cost,” go-slow solutions to document their good practices and to start a best practices program in a phased progression. Funding permitting, a parallel approach would be ideal.

Option 1 – Develop a “Good Story” Communications Campaign

“We need to tell people about the good things we have done and continue to do...” was a common theme among the grower participants. The group would like to further explore developing a public relations program to communicate the “good story” to identified target audiences. Several instances were shared by processors and shippers where just by having things documented, the buyer was satisfied that the seller had a “system” in place to monitor their practices as well as their suppliers’.

Campaign Planning

The following aspects of a PR campaign were outlined:

- Who is the target audience?
- What is the message to be conveyed to the audience(s)?
 - “The California pear industry is _____”
- How to document the “good story” for the California pear industry?
- What is the legacy of the industry?
- Develop grower, shipper, and processor components of the story
 - Environmental
 - Social
 - Economic
- What would be the cost components for a campaign?

“Good Story” Components

The group brainstormed positive activities that could be woven into an industry story:

- Farm labor housing (many growers provide it)

- Industry's commitment to R&D funding over time and its relative proportion to farmgate revenue. Growers feel that the pear industry has a high proportion.
 - Document PPMRF programs and projects and place in the sustainability framework of environmental, social, and economic dimensions
 - Research PPMRF investment over the years and create a metric that can be used to substantiate claim that “the pear industry has spent more per _____ than other crop groups”
 - Define what value the industry has accrued from this investment and what have been the significant outcomes and impacts
- Development of a pear IPM program
- Safety manuals for workers.
- California regulatory requirements – how to turn this into a differentiator? List those items that are stricter than other states and turn that into a value proposition, e.g., mandatory pesticide usage reporting.

It is important to realize that the campaign may focus on what has been done in the past that is manifested in today's practices. More and more, outside parties (e.g., regulatory agencies, NGOs) are interested in what is being done today and what will be done in the future as part of a continuous improvement strategy that can be measured and reported. The campaign will not be complete without the latter strategy being in place.

Option 2 – Develop Industry Practice Checklists/Tools

As a beginning step in the development of a formal sustainable practices program, the group expressed interest in:

- Looking at what inexpensive best management practice checklists might already be available for or applicable to the pear industry
- Determine what additional publicly available checklists might be under development or are planned to be developed
- Working with other tree fruit groups (e.g., cherries, apples, olives, stone fruit) to develop tools

Key to this approach will be determining a process to:

- Develop data collection tool(s)
- Manage individual and industry data (aggregate across all growers with ongoing updates)
- Develop reports to document industry performance

The group listed the following practice areas as potentials for inclusion in an overall program along with potential sources for publicly available tools:

Practice Area	Potential Sources
IPM	UC IPM checklists
Water conservation and quality	Ag Waiver Program; UC best practices; NRCS
Energy efficiency	Other commodity groups; UC post-harvest practices
Air quality	California Air Resources Board

Nutrient management	TBD
Solid waste/recycling	TBD
Labor	TBD

As other small commodity groups are finding out, developing best practice programs is a significant undertaking and often difficult to cost justify. Pear growers were interested in possibly collaborating with other commodity groups by meeting with their industry leaders. Commodities mentioned included cherries and other tree fruit groups.

The following items were identified for follow-up once the group has decided to move forward with tool development:

- o Determine list of practice areas to be covered
- o Determine what tools are available
- o Identify gaps
- o Request public agencies to fill gaps
- o Determine other means to fill gaps
- o Implement a data collection process
- o Aggregate data to a uniform system
- o Develop aggregation policies and procedures

Sustainable Program Management Platform

At the core of best management practice programs applied across multiple growers and/or processors is the ability to capture data on actual performance statistics in order to measure progress, determine education and outreach activities, and report progress to outside parties. This data management function can be done manually, using a group of software applications, or within a centralized database management system.

In order to illustrate various facets of a successful sustainable practices program management tool, SureHarvest configured its Sustainability Information Management System for the pear industry so that industry leaders could see how a sustainable practices program could be managed.

The following are representative screen shots of what was shown to a number of growers, processors, and CPAB staff. Each screen shot is followed by a brief description of its function in the overall program.

SUSTAINABLE PEAR GROWING PROGRAM

Home Login

Monday, December 10, 2007

Login

User Name:

Password:

Remember Login

[Forgot Password ?](#)

A login page provides secure access to the software application. Security and data confidentiality are key components of a program where individuals provide data for their operations. These data are aggregated anonymously to provide industry statistics.

SUSTAINABLE PEAR GROWING PROGRAM

Home Events Assessments Reports Web Resources

Tuesday, December 11, 2007 Andrew Arnold Logout

The navigation bar provides access to program components that are designed to help participants improve their business practices and measure their progress over time:

- Events – list of upcoming industry workshops, training/demo events, etc. with location, time, RSVP information
- Assessments – online best practice lists with the ability to score individual orchards; also includes educational content and action planning tools
- Reports – assessment comparison reports, NRCS conservation practice cross-reference report, and other pear practice evaluation reports
- Web Resources – dynamic list of web links to useful pear industry, crop production, and best practice resources

SUSTAINABLE PEAR GROWING PROGRAM

Home Events Assessments Reports Web Resources

Tuesday, December 11, 2007 Andrew Arnold Logout

Chapter

Year: 2006

Organizations

- Arnold Premium Orchards
 - Arnold Premium Orchards
 - Orchards (0)
 - Home Ranch (90)
 - Island Orchard (60)

Assessment year

Practice area chapters

Chpt 1 Chpt 2 Chpt 3 Chpt 4 Chpt 5 Chpt 6 Chpt 7 Chpt 8 Chpt 10 Chpt 11

4. Pest Management

Chapter Information View

Individual practices

Edit	Criteria	Name	Score	Notes
	4-1	Planning & Monitoring	3	
	4-2	Insect & Mite Monitoring	3	
	4-3	Economic Thresholds	2	
	4-4	Timing Moth Treatments	4	
	4-5	Pheromone Releases	4	
	4-6	Disease Monitoring	2	
	4-7	Herbicides & Water Quality	2	
	4-8	Low-Volume Sprayers	4	
	4-9	Buffer Zone	2	
	4-10	Restricted-Use Pesticides	4	
	4-11	Employee Training	4	

Assessment scores

SAVE

Organizational structure

Growers can set up their farming operations and track their practices at the orchard or block level.

Practices are arranged into chapters and the grower assesses their performance for applicable practices. Practice lists, educational content, resource links can all be viewed in this "electronic workbook."

Growers are able to measure improvement by assessing their operations over several years.

Criteria

Year: 2006

Organizations

- Arnold Premium Orchards
 - Arnold Premium Orchards
 - Orchards (0)
 - Home Ranch (90)
 - Island Orchard (60)

Chpt 1 Chpt 2 Chpt 3 Chpt 4 Chpt 5 Chpt 6 Chpt 7 Chpt 8 Chpt 10 Chpt 11

7. Energy Efficiency > 7-1. Planning & Monitoring

Sustainable practice details

1 of 3

Criteria	Category 1	Category 2	Category 3	Category 4	N/A
7-1. Planning & Monitoring	I have a general idea of total energy use per year in my orchard operation.	An energy audit* of the overall orchard operation has been conducted in the last 2 years And I am using the results from the audit to make decisions on maintenance, capital improvements, and employee training.	I have developed and implemented 25% of a comprehensive energy management plan And Total energy use is monitored and recorded throughout the year And Yearly goals are set for overall energy use, energy use per ton of pears produced, and energy use for gross sales based on baseline monitoring data.	I have developed and implemented 50% of a comprehensive energy management plan And Total energy use is monitored and recorded throughout the year And Yearly goals are set for overall energy use, energy use per ton of pears produced, and energy use for gross sales based on baseline monitoring data. Or Our orchard operation has demonstrated a 20% reduction in energy use from per ton production baseline.	
Your Assessment	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My Notes:

Contact local PG&E representative at (916)866-3011 about pump audits

Store electronic documents including action plans

My Documents

[ADD](#) [Download Action Plan Template](#)

Name	Type	Public	Document	Update
Pump Retrofit Plan	Action Plan	No	Energy Efficiency Action Plan.doc	UPDATE

Action Plan Notes

[ADD](#)

[View All](#) Per Page: 10 [Export](#) Action Plan Notes 1-1 of 1 [First](#) | [Previous](#) | [Next](#) | [Last](#)

Created	Target Date	Complete	Note	Update
11/14/2007	11/19/2007	No	Share this plan with the Sacramento grower group	UPDATE

Track progress on action plans

1 of 3 [NEXT >](#)

Sustainable practice details are listed for the grower so that they can determine where they are in the sustainability continuum for each practice. Criteria/practice detail is developed by industry stakeholders during the program development phase. Additional chapters and practice detail can be added as the program evolves. Serving as an electronic filing cabinet, growers can “attach” any type of electronic document—photos, pesticide usage reports, audit documents, etc.—to their orchard to track their practices. Continuous improvement is also a key component of best practice programs and growers can create and store action plans for improving their performance for individual practices.

SUSTAINABLE PEAR GROWING PROGRAM

Home Events Assessments Reports Web Resources

Tuesday, December 11, 2007 Andrew Arnold Logout

▼ Edit Comparison Report [Help](#)

Name:

Year:

View: Chapter Criteria

Compare: State Means
 Region Means
 Size Means

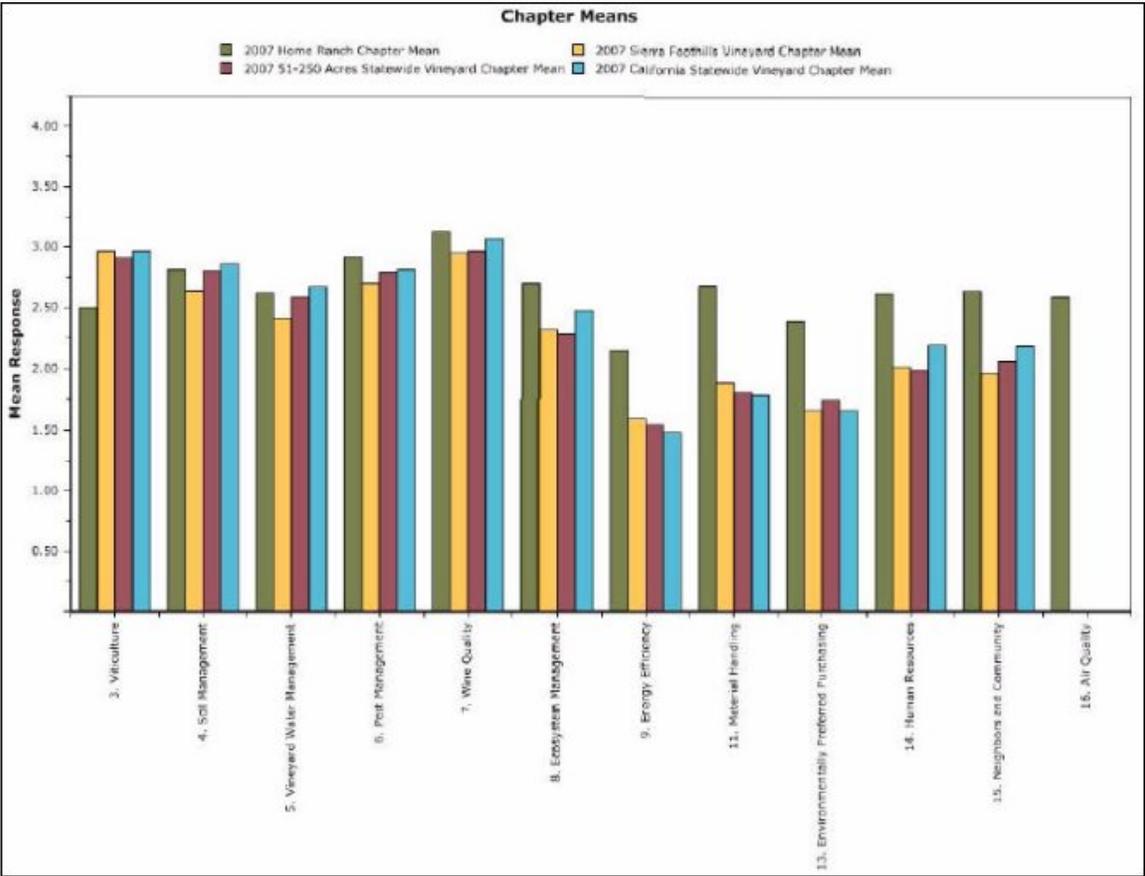
View All Per Page: 1-1 of 1 First Previous Next Last

Sort	Year	Type	Organization	Enterprise
<input type="checkbox"/> 1	2006	Orchard	Arnold Premium Orchards	Arnold Premium Orchards Home Ranch

Created by Andrew Arnold on 12/10/2007 6:18:38 PM

Create comparison reports for specific operations and assessment years

Once enough growers have started to capture assessment data, industry-wide data can be aggregated and an individual grower can create reports comparing themselves against their peers. This mechanism can also be used to measure and monitor the industry's progress in improving their overall performance.



The above report figure was taken from the Sustainable Winegrowing Program and illustrates how an individual operation can be compared to state, regional, and size statistics providing the grower with a “measuring stick” for their performance in multiple practice areas.

Observation: Demonstrations of this data management system were met with enthusiasm and it was viewed as an ideal way to use the Internet to reach the wide geography of the pear growing community as well as capturing, aggregating and reporting industry performance data. The potential exists to also use the system to submit reports to processors and packers as required.

Conclusions and Recommendations

The project resulted in two significant conclusions:

- Pear growers would like to publicize the “good things” they have done relative to pest management and environmental practices through some form of a communications campaign.
- While there was not unanimous consent, growers agreed that formalizing a best practices program is a worthwhile endeavor, but due to funding constraints, would like to take a “go-slow” approach to developing one with the idea being to make progress towards a complete program.

The two activities are not seen as being mutually exclusive because in order to develop documentation of the campaign, some level of identification and quantification of best practices will need to be done. This exercise would then flow nicely into developing the early set of best practices and tools that could kick-off a sustainable practices content development phase.

Other conclusions from the project included:

- UC researchers were amenable to working with growers to provide existing best practice lists and to develop new ones.
- Growers are not convinced that a sustainable practices program will give them a competitive advantage in the marketplace. Packer/shippers and processors will need to continue to share market feedback and trends with their grower suppliers.
- An electronic, Web-based program management tool would be the preferred method of implementing a program.
- Industry leadership will need to discuss how a sustainable practices program fits into the broader industry strategy to help set planning and tactical constraints on further activities.

Next Steps

The following are recommended next steps to pursue the two options identified by the group: develop industry best practice checklists and launch a public relations “good story” campaign.

- Decide sequence and relative priorities of best practices and public relations work
- Identify grower “champions” and working team to determine strategy for best practices program and industry publicity campaign
 - Clearly define role of CPAB, UC, growers, packers, and processors
- Determine best practice list strategy
 - What practice areas will be addressed?
 - What is available today? (UC, other commodities, third-party developers)
 - Evaluate available programs and conduct gap analysis to determine required work
 - Identify potential sources
- Explore collaboration with other like-minded California commodity groups to develop a list of broadly applicable sustainable practices with each group adding their own commodity-specific practices
- Define pear industry public relations campaign
- Explore funding opportunities
 - Amounts needed
 - Identify potential sources and funding mechanisms
- Develop going-forward plan

Based upon the sustainable practice program development methodology shown in Figure 1, the Phase 1: Strategic Planning and Phase 2: Define Sustainable Practices General Areas should be pursued during 2008 to address the best practice checklist option.

Acknowledgements

The authors wish to thank Bob McClain of CPAB for supplying industry contact information for the best practices survey, assisting with the logistics for the industry focus group meeting, and for providing valuable insights into the workings and history of the California pear industry.

The Great Valley Center’s participation in this project was additionally supported through a grant from the Columbia Foundation.

APPENDIX 1: Sustainability Definitions & Programs

The following are examples of various sustainability definitions and programs:

Wal-Mart⁷

“Sustainability” means our commitment to better long-term business performance through improved social, economic, and environmental practices.

SYSCO (Agricultural Sustainability)⁸

Through a series of initiatives, SYSCO is contributing to environmental stewardship and rural social vitality.

- Integrated Pest Control...using environmentally-friendly pesticides only as necessary
- Buy local, Sell Fresh...a local food system initiative supplying organic food items
- Ag-In-The-Middle Procurement... family-owned farms producing value-added products
- Business Coalition for More Sustainable Food... insuring sufficient productivity in the future

Food Marketing Institute⁹

Business practices and strategies that promote the long term well-being of the environment, society and the bottom-line.

Fish Friendly Farming¹⁰

Certification program for vineyard properties that are managed to restore fish and wildlife habitat and improve water quality.

The focus is on the land manager as the central figure in achieving and sustaining environmental quality. This approach ensures long-term environmental improvements, sustainable agriculture and implements the principles of state and federal environmental regulations.

Food Alliance¹¹

Sustainable agriculture is a system that emphasizes: protecting and enhancing natural resources using alternatives to pesticides, and caring for the health and well being of farm workers and rural communities. Sustainable agriculture represents a long-term goal to help farming become more economically viable, environmentally sound and socially responsible.

⁷ http://walmartstores.com/microsite/walmart_sustainability.html, 11-11-2007

⁸ http://www.sysco.com/aboutus/aboutus_sustainability.html, 11-11-2007

⁹ <http://www.fmi.org/sustainability/>, 11-11-2007

¹⁰ <http://www.fishfriendlyfarming.org/>, 11-11-2007

¹¹ <http://www.foodalliance.org/>, 11-11-2007

Protected Harvest¹²

Crop Production: A point system is used that rewards growers for implementing ecologically based practices in nine different management categories: field scouting, information sources, pest management decisions, field management decisions, weed management, insect management, disease management, soil and water quality, and storage management.

Toxicity Score: In order to qualify for certification, growers must stay below an established total number of Toxicity Units per acre.

Chain of Custody: Each packer or handler of the crop must undergo an additional chain-of-custody handler audit that follows the crop from field to retail, including during storage, packing, pallet loading, and transportation, ensuring the integrity of Protected Harvest's certification.

CSWA Sustainable Winegrowing Program¹³

To place the concept of sustainability into the context of winegrowing, the program defines sustainable winegrowing as growing and winemaking practices that are sensitive to the environment (Environmentally Sound), responsive to the needs and interests of society-at-large (Socially Equitable), and are economically feasible to implement and maintain (Economically Feasible).

SureHarvest¹⁴

The concept and practice of balancing economic prosperity, environmental stewardship, and social responsibility, so they together lead to an improved quality of life for ourselves and future generations.

APPENDIX 2: Survey Written Comments

The following written comments were submitted on the survey response form.

I support pursuing such a program, but only if the practices and goals are realistically achievable by small growers – i.e. small businesses with less than 100 acres. I also do not believe that it is feasible to grow pears organically – not commercially anyway.

Water conservation is a desirable goal but not currently possible or encouraged due to buyers' demand for large fruit – the larger the better.

Pears have left a big footprint around the pesticide issue. Please document the progress the industry has very proactively made in this issue, as integrated pest management has

¹² <http://www.protectedharvest.org/farmers/standards.htm>, 11-11-2007

¹³ <http://www.sustainablewinegrowing.org/aboutswp.php>, 11-11-2007

¹⁴ Dlott, J., Gunders, D. & Arnold, A. 2006. Sustainability Trends in the Agrifood Sector. SureHarvest Briefing Paper, SureHarvest, Soquel, California: <http://www.sureharvest.com/pdf/SureHarvest-SustainabilityTrends.pdf>

been funded by industry research and adopted whole heartedly by most, if not all, in the industry. Unfortunately, the industry has not shown itself to be financially sustainable. Our impact on the environment in my district has been reduced by over ½ in my 35 years in the pear industry just through reduction in producing acres.

If fresh market + processing returns to the farm gate do not increase by at least 30% for the 2008 crop year, a sustainable pear practices assessment program won't be needed.

This sustainable survey should include an economic element. Sustainability should include a sustainable return to the grower!!!

This farm is currently being certified as Fish Friendly.

Sustainable or organic production makes no economic sense to producers as long as the ultimate consumers of our products refuse to acknowledge and pay for these practices to the producers. Wholesale buyers and processors have taken advantage of the producers demanding these more costly practices while refusing to pay growers commensurate with these added costs and risks. I for one don't care if the consumer goes without or starves.

Organic can't sell all they have!

If the consequence of this survey is to create addition paper work for pear growers, without a substantial increase in financial returns to the grower, then I believe it should be terminated immediately. Q7 – stupid question/choices. I recycle all plastic jugs, papers, etc. I have 1 ½ yard dumpster that is serviced weekly therefore I do know how much waste I generate. Q9 – All growers are aware of the concerns of the community and they comply with the most restrictive pesticide regulations, drift regulation, run-off regulation, air regulations, etc. Every grower has a safety worker policy that is inspected by the county Ag Commissioner.

Before such a program is started, you might check and see what growers are doing. My farm is currently going through the Fish Friendly Farming certification. I see no reason to get involved in another program, when I will be in one already.

We are certified by "Fish Friendly Farming" and would like to recommend it to others.

Not at all enthusiastic about pursuing a program! Too damn much paperwork and management! We are already over-burdened with regulations and reporting. I need to spend more time in the field and less time at the desk if we are going to survive in this industry. I do realize it is inevitable that we some day comply, however I will do it grudgingly.

This has been needed for a long time. Many consumer groups perceive pears as heavily dependent on chemical inputs despite IPM claims by growers.

What does sustainability mean? Is the focus here primarily to reduce inputs? Marketing tool? Grower awareness? Environmental sensitivity?

What does sustainable mean?

APPENDIX 3: Workshop Participants

The following pear industry members participated in the meeting:

Name	Organization	Group
Chuck Baker	Chuck Baker's Ranch	Grower
John Callis	Naumes, Inc.	Grower + Shipper
Joe Conant	Whitney Warren Ranch	Grower
Virginia Chhabra	Greene & Hemly Inc.	Grower + Shipper
Diane Henderson	Henderson Rohner Orchards	Grower
Michael Hildreth	Hildreth Farms Inc.	Grower
Jeff McCormack	John McCormack Co., Inc.	Grower
Tim Norgard	Norgard Farms, Inc.	Grower
Bill Oldham	Oldham Farms	Grower
Larry Thornton	Thornton Pear Ranch	Grower
Broc Zoller	The Pear Doctor, Inc.	Grower
Jim Adaskaveg	UC Riverside	UC
Doug Gubler	UCCE - UC Davis	UC
Chuck Ingels	UCCE Sacramento County	UC
Bob Van Steenwyk	UCCE - UC Berkeley	UC
Lucia Varela	UCCE Sonoma County	UC
Jerry Cordy	Pacific Coast Producers	Processor
Pat McCaa	Del Monte Foods	Processor
Dan Winiecke	Sabroso	Processor
Bob McClain	CPAB, PPMRF	Project Sponsor
Andrew Arnold	SureHarvest	Facilitator
Jeff Dlott	SureHarvest	Facilitator