



CALIFORNIA PEAR SUSTAINABILITY PRACTICES SURVEY

2011 Executive Summary



SUSTAINABILITY FROM THE GROUND UP





INTRODUCTION

In 2009, the California pear industry conducted an initial assessment of its farmers to benchmark the adoption of Best Management Practices related to a number of key areas of “sustainability.” In 2011, the assessment was repeated to reaffirm the baseline established in 2009, expand survey questions and increase the number of farmers participating in the assessment. This report is a summary of the findings from the 2011 assessment. Participation in the assessment did increase in 2011 with resulting data coming from farmers who represent 74 percent of the total California pear acreage in the state.

In both the 2009 and 2011 sustainability assessments, a significant percentage of California pear farmers demonstrate an exceedingly high level of adoption of many key indicators of sustainability. What seems clear from these assessments is that California pear farmers know they are growing healthy food for a global community and that they are taking an intentional and thoughtful long-term approach in how they care for the land, environment, resources and communities where they live and work.

About the Assessment

The practices assessed in this survey were identified by a committee of California pear farmers, handlers (packers and processors), crop consultants, and representatives of the California Pear Advisory Board and the Pear Pest Management Research Fund. Input and facilitation was provided by SureHarvest Inc., a leading agricultural sustainability program design firm.

The best practices assessed were related to the following areas:

- General Farm Management
- Integrated Pest Management
- Soil & Nutrient Management
- Energy Management
- Air Quality
- Water Management
- Ecosystem Management
- Employer Practices
- Social Issues

The list of practices drew heavily on the University of California's Pear Year-round IPM Program Annual Checklist and the SYSCO Farm/Ranch IPM/Sustainable Audit Checklist v09.01. SYSCO is a major purchaser of California pears for processing and its sustainability program has been influential in the world of food processing.

KEY FINDINGS

The California Pear Legacy

Dating back to the California Gold Rush, California pear farmers have a history of a commitment to safe, sustainable and healthy farming. Pear orchards in California are some of the oldest on record to still be producing commercially. Results of the 2011 assessment reveal the average age of a California pear orchard ranges between 33 and 100 years old, with some of the oldest plantings dating back to the 1840s. Many of today's pear farmers are still farming orchards handed down to them by their grandparents or great-grandparents and most hope to pass their farms on to their own children and grandchildren.

This trend in multi-generational farming necessitates production practices that are sustainable and ensure the health of soil, trees and natural resources for future generations. California pear farmers are literally pioneers in the area of environmentally-friendly pest management practices. The industry has been conducting research into Integrated Pest Management (IPM) strategies for decades and this is a key reason for the extremely high adoption of IPM farming practices found in this assessment of pear farmers.

Modern commercial pear farming is an extremely competitive business. Marginal prices, sometimes below the cost of production, have taken a toll on the number of pear farmers who remain in business. Where once the state had over 300 pear farmers, today there are just 60. Those who are left must use their resources wisely and they have learned to band together to fund marketing programs and conduct important research necessary to thrive and prosper.

The California pear farmer who remains in business today is, by necessity, smarter and more efficient than ever before. These farmers rely on family members, neighbors and fellow pear farmers in order to prosper and contribute back to the community. Today's California pear farmer perfectly fits the model of the "ideal" farmer many of today's consumers say they are looking for. California pear farmers are basically growing and harvesting fruit like they have done for generations, but they have employed new technologies to reduce pesticide use and preserve the environment. They are by and large small, non-corporate, family-owned businesses, who care and support the people in their communities. If the California pear industry were ultimately not to survive, it would be a significant loss for the rural communities where they farm and for consumers who enjoy California pears.

Profile of the California Pear Farmer



30-100

Average age of California pear orchards 33 to 100 years old



60

Number of pear farmers in state



130 acres

average size of California pear orchards



Family-owned, multigenerational businesses



Produces majority of fresh pears in summer month of July and August

The California Pear Community

While strong, the California pear community is small with approximately 60 pear farming operations in business today. These farmers represent a significant portion of the pears produced in the U.S. during the summer months when California farmers are harvesting the only fresh pears in the country.

The average size of a California pear farm is 130 acres which are self-owned and operated. On average, California pear farmers report they farm pears on an additional 140 acres which they do not own themselves. These figures indicate the California pear industry is not made up of large corporate farming interests.

The California pear industry is a close knit community. All California pear farmers support the activities of the California Pear Advisory Board. One of the most important functions of this Board has been to commission production research projects which have lead to the widespread adoption of Integrated Pest Management practices. All pear farmers continue to support this research through mandatory assessments, or self-imposed "taxes," which fund the California Pear Board's research. In addition, the 2011 Sustainability Assessment shows that 69 percent of pear farmers directly support research activities by directly providing funds, equipment or supplies to researchers and 63 percent allow scientists to use their orchards for research purposes.

The sustainable practices employed by the majority of California pear farmers make them excellent neighbors in the small, rural communities where pears tend to be grown. California pear

farming areas are arguably in some of the most beautiful places in the state. The beauty of historic pear orchards contribute significantly to the appeal of communities such as Courtland and Clarksburg located in the Sacramento River Delta growing region; Lakeport and Kelseyville in the Lake County pear growing district; and Ukiah in the Mendocino growing district.

California fresh pears are all harvested by hand and thus require a significant amount of labor, particularly during harvest. As with all of California agriculture, farm workers are an important and valued resource. Because pear farmers compete with many other produce farming operations which also require significant hand labor, the labor market is competitive. Pear farmers have found they must meet or exceed others when it comes to farm worker wages. If not, they may find themselves without enough labor to harvest their crop. As a result, California pear farmers know the value of a work force that is treated well and paid fairly. Most pear farmers note the importance of ensuring that harvest crews return to their orchards for harvest each year. Thus a high percentage, 86 percent, provides housing for their workers.

California pear farmers also report they are committed to healthy relationships with the other businesses and residents of the communities where they live and work. Thus they strive to protect the quality of life, support the economy and contribute to local events and causes. Sustainability assessment results bear this out. Below are some excerpts which demonstrate that pear farmers are utilizing "neighborly" farming practices.

California Pear Farmers are Good Neighbors



- 96% ...of California pear farmers are employers in the communities where they farm.
- 94% ...chip, rather than burn orchard waste, to improve air quality.
- 87% ...maintain vegetation or cover crops in orchard row middles to reduce dust, prevent soil erosion and limit tractor operations.
- 84% ...have a written, updated plan to manage and reduce pesticide drift incidents.
- 81% ...recycle materials from their orchard operations.
- 80% ...apply fertilizers at, or below, recommended University rates to enhance and protect soil and water quality.
- 80% ...employ practices to protect properties outside of their farming operations from soil erosion.
- 80% ...use sprinkler, micro-sprinkler or drip irrigation to reduce water usage.
- 71% ...use tissue nutrient testing to plan fertilizer rates which ensures they do not over-fertilize.
- 50% ...maintain a portion of their farm property in an undeveloped state with potential for wildlife benefits.

These are all hallmarks of sustainability and are a sure indication that the California pear industry is a small, but innovative, group which has come together to help do big things.

Stewardship on California Pear Farms

When it comes to environmentally-friendly farming practices, specifically those involving Integrated Pest Management (IPM) strategies, California pear farmers have an exceptionally high level of adoption. Virtually all farmers report they employ pest control advisors to scout orchards for pests before making any decisions to treat with pesticides, 97 percent use pheromone traps for monitoring key pear pests and 91 percent use pheromones to control pests.

These are all key components of an integrated IPM system which strives to control pests through means other than application of pesticides. This high level of adoption of IPM practices in California pears is higher than many other crops produced in the state and has drastically reduced the use of older, broad-based pesticides. Instead of turning to these older pesticides, pear farmers more often utilize non-pesticide treatments, incorporate beneficial insects and opt for newer, reduced risk pesticides that target specific pests only when IPM techniques are not enough.

A long-term analysis of the California Department of Pesticide Regulation's Pesticide Use Report, which is a mandatory reporting system required whenever a California farmer makes a pesticide application, shows that California pear farmers have reduced their use of the most highly restricted category of pesticides --organophosphate and carbamate compounds -- by 91 percent in the past 12 years.

Perhaps the most crucial factor in California pear farmer's success in reducing pesticide use is the advancements they have achieved in pheromone mating disruption techniques to control codling moth, which is the California pear industry's primary pest. This mating disruption technique uses dispensers (usually via twist ties applied to pear tree branches) which

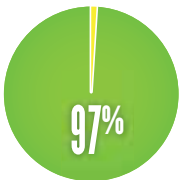
release a synthetic version of female codling moth pheromone. In nature, males are attracted to and locate female moths by sensing natural pheromones released by the females. When adequate amounts of synthetic pheromones are released into the orchard, male moths become confused and are unable to tell the difference between the scent of a female moth and the scent of the synthetic pheromone. The males are then limited in their ability to locate females for mating and, thus, future codling moth populations are significantly reduced.

Not surprisingly, since California pear farmers rely heavily on IPM farming techniques, 91 percent report that farm employees participate in IPM/Sustainable training beyond what is legally required.

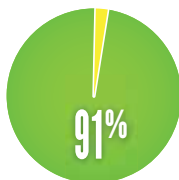
When pesticides are applied, pear farmers report that trained personnel collect comprehensive data when making application decisions. For example, 88 percent of California pear farming operations consider the potential for residue on the crop at harvest and opt for those with the least potential for residues; 81 percent collect data on the impact of pesticide applications on aquatic invertebrates; 78 percent consider impact on beneficial insects; 75 percent consider chronic toxicity to mammals; and 72 percent consider potential water quality problems. In addition, 75 percent consider availability of alternative pesticide formulations that are more environmentally-friendly.

The end result is that the California pear farmers are making every attempt to reduce their use of pesticides by maintaining a balance among beneficial and predatory pests and always seeking to use the most environmentally-friendly option when it comes to pesticide use.

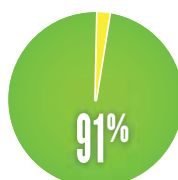
Environmental-Friendly Pear Farming



California pear farmers use pheromone traps to monitor pest populations



California pear farmers use pheromones as a form of pest control



reduction in the use of Organophosphate and Carbamate pesticides in California pear orchards in the past 12 years.

"California pear farmers know they are growing healthy food for a global community and that they are taking an intentional and thoughtful long-term approach in how they care for the land, environment, resources and communities where they live and work."

Commitment to Health

California pears are healthy food and farmers work to keep them that way. As noted above California pear farmers are committed to growing a product with the least amount of pesticides possible. As a result, pesticide residues on pears are extremely low. As with all other produce items, pesticides approved for use on pears must undergo strict testing to ensure safety with additional factors built-in to protect infants and children. Pears are regularly monitored as part of both national and California monitoring programs designed to ensure that pears sold in stores are safe for consumption. The vast majority of pears tested have either no detectable pesticide residue at all, or the residues are well below safety limits established by the United States Environmental Protection Agency. According to toxicologists, who have analyzed data concerning pesticide residues found on pears, when pesticide residues are found on pears they are so small that a child could consume 851 servings of pears without any health effects at all.

Not only are pears safe for consumers, but California pear farmers also take steps to protect workers who labor in their orchards. An analysis of pesticide laws in California shows that whenever a pesticide is applied, farmers are subject to 70 different regulations to protect the environment, workers and consumers. Further, California pear farmers report that 96 percent of their work force receives training in safety to prevent accidents and protect workers.

When it comes to nutrition, California pears are low in calories, contain no fat, cholesterol or sodium; they are high in fiber, a good source of vitamin C and they contain natural antioxidants. A diet rich in fruits and vegetables, such as pears, has been linked to reduced risk of heart disease and some cancers. In addition, GMOs are never used in the production of California pears.

Because pears are a healthy fruit, California pear farmers have adopted a cause which draws attention to the importance of diet in reducing disease. One hundred percent of fresh California pear farmers commit a portion of their assessments to support a program known as "Pears Care." This campaign is designed to raise awareness and funding for the Susan G. Komen for the Cure® Foundation which is devoted to ending breast cancer. As part of the regular marketing activities of many pear shippers, pears are packed in special pink boxes with the Susan G. Komen for the Cure® logo and the pink ribbon associated with the fight against breast cancer. These boxes are sold in retail produce departments throughout the country, not just during October, which is National Breast Cancer Awareness Month, but for the entire California pear shipping season. A financial contribution to Susan G. Komen for the Cure is provided by the California Pear Advisory Board to support this important cause.



Areas for Improvement

While this assessment confirms that California pear farmers are some of the most sustainable farmers in operation today, it must be recognized there is always room for improvement and that sustainability is something that, by its nature, should be continually advanced. Toward this end, California pear farmers have identified some specific areas where best practices have a lower percentage of adoption. These areas have been targeted for improvement and a series of grower meetings have been held to communicate the importance of advancements and where further research may be warranted. Examples of areas where the California pear industry has identified the need for improvement include:

- 55% of growers do not have a written nutrient management plan. This practice is increasingly seen as a responsible methodology for both minimizing fertilizer impacts on the environment and also finding economic efficiency with today's high fertilizer prices.
- 48% have not tested organic matter levels in the soil in the past 5 years. Organic matter is known to have multiple nutrient management benefits.
- 40% have not done a pump efficiency test in the past 5 years. These tests can identify repair needs that can save significant energy and make irrigation more efficient.
- 13% of pear farmers produce some electricity from solar and 7% produce some electricity from wind. Economic alternative energy supplies should continue to be pursued.

Conclusion

Findings from the 2011 California Pear Sustainability Survey indicate the California pear farmers are among the most sustainable food producers today. The California pear industry is committed to educating individual farmers, packers, shippers and processors so that sustainable practices can be enhanced and advanced. A complete copy of California pear farmer survey results is available on request from the California Pear Advisory Board or your California pear supplier. A documentary film which summarizes the sustainability survey findings and features interviews with California pear farmers is available for viewing at www.calpear.com.



About the California Pear Advisory Board

Established in March 1992, the California Pear Advisory Board (CPAB) is a state agricultural marketing order covering both fresh and processed pears produced in California. Its programs include education, research, standardization and the cumulating of industry statistics and information.



About the Pear Pest Management Research Fund

The Pear Pest Management Research Fund is a non-profit mutual benefit corporation formed in the early 1990s where pear growers and processors have come together to fund scientific research to improve existing methods, develop new methods and educate others about methods to grow and process pears that are economical and safe for consumers and the environment.



About SureHarvest, Inc.

Since 1999, SureHarvest, Inc. has provided solutions for growers and agri-food companies pursuing sustainability strategies - to increase efficiencies, enhance product quality and practice environmental stewardship.