Agriculture is an important part of life in Lake County. Commercial production of the county's leading crops, pears, wine grapes, and walnuts, started in the 1870s and 1880s. Today, agriculture is still a major contributor to the county's economy, rural lifestyle, and attractive open space.

While Lake County's population has increased substantially in recent decades, the number of farmers has decreased. Therefore, an increasing proportion of the population is unfamiliar with agriculture.

Because farmers and their non-farming neighbors often have different lifestyle and economic goals, conflicts can occur. One way to reduce conflicts is to improve communication between farmers and neighbors.

This leaflet provides information to non-farming neighbors in Lake County on orchard and vineyard operations, agricultural pesticide regulation, and new farming techniques.

Summary of Local Orchard and Vineyard Operations*

WINTER	Explanation of Operation
Pruning	Orchards and vineyards are pruned by hand. Prunings are chopped and left in place.
Burning	If adequately dried, whole trees and vines can be burned year round with an economic exemption and proper burn permits.
Weed control	Herbicides, mowing, and cultivation are used. Sprays are applied low to the ground and cause little drift. Weed control is done year round.
Insect pest control	Non-toxic oil sprays are applied to pears to smother insect eggs and adults.
Fertilizer application	Non-irrigated farms are fertilized in late February so winter rains move fertilizer into soil.
SPRING	
Frost protection	Sprinklers, wind machines and to a lesser extent, orchard heaters are used. Wind machines can be noisy. Proper orchard heaters produce minimal smoke and odors.
Fungal disease control	Sulfur (spray or dust) and other fungicides are used to control mildew on grape vines. Sulfur sprays and other fungicides are used on pears to control scab.
Insect pest control	Spring insect pests are common in pears, and there can be some on grapes.
Bacterial disease control	Antibiotics and copper (sprays or dust) are used to control fire blight disease of pears. Copper is also used to control walnut blight.
Fertilizer application	Fertilizer is applied in the irrigation system or broadcast onto the soil and irrigated in.
SUMMER	
Irrigation	Most orchards are irrigated with sprinklers or by flooding, while most vineyards are irrigated with low volume "drip" emitters. Engine-driven irrigation pumps may be noisy.
Insect pest control	Pears require several sprays due to the pests codling moth, pear psylla, and mites. Grape vines may be treated for mites and leafhoppers and walnuts for walnut husk fly.
Fungal disease control	Sulfur and other fungicide applications on grape vines may continue.
FALL	
Bird Control	Propane cannons and other noise emitters are used in vineyards to frighten birds away.
Harvest	Pears are harvested in August and early September, grapes from September through October, and walnuts from late September through November, bringing increased traffic from hauling trucks. Winery waste may produce odors. Walnut harvest may be dusty.
Fertilizer application	Fertilizer is applied before harvest to walnuts and after harvest to pears and grapes.

*For additional information on how and why these operations are carried out, please contact the agencies and organizations, or see the references listed on the back of this leaflet.

Agricultural Pesticide Regulation

(1) Registration. California has the strictest pesticide regulation process in the nation. Pesticides must be registered with the federal Environmental Protection Agency and the California Department of Pesticide Regulation. The registration process includes:

- tests for toxicity, fetal effects, environmental fate, and product effectiveness.
- review of the pesticide label, which describes use restrictions and hazards.

(2) The California Department of Pesticide Regulation enforces pesticide laws, monitors pesticide residues in the environment, ensures farm worker and general public safety, and licenses businesses that use pesticides.

(3) Farmers receive recommendations to use pesticides from pest control advisers licensed by state exam, must pass an exam to be qualified to apply or supervise the application of pesticides, and report all pesticide use to the county Department of Agriculture in monthly reports.

(4) Local enforcement, carried out by the county Department of Agriculture, includes:

- inspections to ensure safe work conditions, proper safety training, and compliance with pesticide use regulations.

- permit issuance with site-specific instructions for materials with restricted use due to health, environmental, or other effects.

- investigation of incidents involving pesticide use.

New Farming Techniques

Lake County agriculture is changing rapidly as farmers and the general public recognize the potential environmental and health impacts from agriculture. Farmers continue to support research and adoption of new, environmentally sound, techniques.

Integrated Pest Management, or IPM, involves considering the farm system as a whole and using a variety of methods to control pests. Natural controls are used in preference to pesticides, and pesticide use is based on careful monitoring. Examples of IPM methods are given below:

Pheromones are chemicals produced by insects to communicate with other insects. For example, researchers are developing methods to saturate orchards with codling moth pheromones to disrupt reproduction of this major pear pest. This will allow great reduction or elimination of the standard codling moth insecticides. Because these insecticides often reduce beneficial insects and lead to outbreaks of other insect pests, their reduction will decrease the need for other insecticides as well.

Biological control is the use of living organisms to control a pest organism. An example is the use of predatory mites to control spider mites in vineyards. In pears, a harmless strain of bacteria is used to control fire blight disease.

Cultural control involves changing farming practices to reduce pests. One example is topping pear trees to eliminate an area where pests thrive. Another example is planting resistant rootstocks to control phylloxera root aphids in vineyards.

Irrigation practices are changing as more farmers switch to low volume systems. Besides conserving water, soil between rows stays dry during summer, reducing the need for herbicides.

Fertilizer can now be applied precisely when needed through sprinkler and drip systems. This reduces the chance of ground water pollution.

Additional Resources
Agencies and Organizations

Lake County Department of Agriculture
883 Lakeport Blvd.
Lakeport, CA 95453
(707) 263-0217

Lake Co. Air Quality Management Dist.
883 Lakeport Blvd.
Lakeport, CA 95453
(707) 263-7000

University of California Cooperative Extension
883 Lakeport Blvd.
Lakeport, CA 95453
(707) 263-6838

Lake County Farm Bureau
65 Soda Bay Road
Lakeport, CA 95453
(707) 263-0911

California Women for Agriculture
P. O. Box 279
Finley, CA 95435
(707) 987-0603

References

Lake County Factbook, U.C. Cooperative Extension

U.C. Publications Catalogue (many resources), U.C. Cooperative Extension

Calendar of Operations for Backyard Pears, for Grapes, and for Walnuts, U.C. Cooperative Extension

IPM for Apples and Pears, and for Walnuts. U.C. IPM

Grape Pest Management, U.C. DANR

U. C. Post Management Guidelines (various), U.C. IPM

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Additional funding provided by: Bank of Lake County, California Women for Agriculture, Lake County Chapter, Clear Lake Grange #680, Lake Community Bank, Lake County Farm Bureau, Lake County Marketing Program, UC Cooperative Extension, Lake County, and West Lake Resource Conservation District.

Agriculture in

Lake County, California

Guide to Orchard and Vineyard Operations

Produced by the Lake County Farmers and Neighbors Planning Committee, dedicated to ensuring continuation of agriculture as part of Lake County's economic and cultural future.