



Master Gardeners of Placer County Home Gardener's Guide to Viticulture Resources

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Introduction



Do Your Homework

Establishing and maintaining a vineyard requires both a monetary and time commitment over many years, so “look before you leap.”

This guide includes a list of publications, websites, classes, and organizations that will enable you to educate yourself about all aspects of viticulture.

When you uncork your first bottle of wine made from your own grapes, you should first toast yourself for the planning, perseverance, and patience it's taken over 5+ years to get you to this point.

Thinking about putting in a vineyard?

Or need help maintaining the one you have? This guide is designed to help home gardeners find research-based answers to their wine grape growing questions.

While this guide is designed for home gardeners, some of the references are to resources for commercial wine grape growers. Why? Because your grapevines don't know where they're planted—they need the same loving care whether they're in your back yard or in a winery's 20-acre vineyard. The basics are the same--it's just a matter of scale.

Putting in a small vineyard will require a smaller monetary investment (e.g., a backpack sprayer vs. a tractor and sprayer), but it will still require the same dedication to care.

Please note — This guide includes university-based as well as non-academic resources. Practices and recommendations from non-academic resources are not endorsed by the University of California and are provided for informational purposes only.

Establishing and Managing a Vineyard

The following outline is a summary of what you'll need to consider before you plant a vineyard and what you'll need to know to make it a success:

Starting Your Vineyard

- Planning
- Site Selection and Preparation
- Soils
- Choosing Varieties and Rootstocks
- Trellis and Training Systems

Managing Your Vineyard

- Pruning
- Canopy Management
- Nutrition and Fertilization
- Irrigation
- Harvest

Integrated Pest Management

- Insects
- Diseases
- Weeds
- Animal Pests

Viticulture Publications

Backyard Vineyard Books

If you're thinking about a vineyard but not sure what's involved, these books are a good place to start. An Introduction to Viticulture publication is not currently available from the University of California, but these publications provide a good non-academic overview.

From Vines to Wines, 5th Edition: The Complete Guide to Growing Grapes and Making Your Own Wine

by Jeff Cox, March 2015, Storey Books

<http://www.storey.com/>

Publisher's note: From breaking ground to savoring the finished product, every aspect of growing flawless grapes and making extraordinary wine is covered in this classic guide. Fully illustrated instructions clearly show you how to choose and prepare a vineyard site; build effective trellising systems; select, plant, prune, and harvest the right grapes for your climate; press, ferment, age, and bottle wine; and judge wine for clarity, color, aroma, and taste. This revised and updated second edition features all-new information on creating your own sparkling wines, ice wines, port-style wines, and dessert wines.

"Cox has a lively prose style that keeps this guide for grape growers and home vintners from ever becoming dull or pompous. Whether you plan to grow or make your own wine or just want to understand what you're seeing when you visit a winery or vineyard, this book will prove invaluable." — San Francisco Examiner

The Grape Grower - A Guide to Organic Viticulture

By Lon Rombough, December 2002, Chelsea Green Publishing Company

<http://www.chelseagreen.com/the-grape-grower>

Publisher's note: Now for the first time comes a book for grape growers who wish to use organic growing methods to raise healthy, thriving vineyards in the backyard or on a small commercial scale. *The Grape Grower* distills the broad knowledge and long-time personal experience of Lon Rombough, one of North America's foremost authorities on viticulture. From finding and preparing the right site for your vineyard to training, trellising, and pruning vines to growing new grapes from seeds and cuttings, *The Grape Grower* offers thorough and accessible information on all the

basics. The chapters on grape species, varieties, and hybrids are alone worth the price of a college course in viticulture. Technical information on the major (and minor) insect pests and diseases that affect grapes, as well as their organic controls, makes this book an invaluable reference that readers will turn to again and again.

A review by C.T. Kennedy (3/2003),

"Subtitled 'A Guide to Organic Viticulture' to create a series with a like-named apple book by the same publisher, this is really a guide to grape growing on a modest scale, from backyard to boutique vineyard growers, or for the ambitious who start small but intend to finish big, without matriculating in the viticulture program at Davis. It is not a polemically organic book—in fact, conventional control of pests and diseases are frankly disclosed alongside suggested "softer" courses of action. The book presents procedures that are doable scale, designed for a low-capital, limited-to-part-time grower of vines."

© Copyright 2003, California Rare Fruit Growers, Inc.

The Organic Backyard Vineyard: A Step-by-Step Guide to Growing Your Own Grapes

by Tom Powers, June 2012, Timber Press

<http://www.timberpress.com/>

Publisher's note: Interest in wine shows no signs of slowing down—wine tours, tastings, and vacations are now common and homeowners often have space dedicated to their collection. The logical next step? Learning to grow and make your own.

In *The Organic Backyard Vineyard* expert Tom Powers walks the small grower through the entire process of growing grapes, with a month-by-month maintenance guide covering all regions of the U.S. and Canada. He explains everything a beginning grape grower needs to know: how to design and build a vineyard, how to select grapes for each region, how to maximize yield using organic maintenance techniques, how to build a trellis, how to harvest at peak flavor, and how to store grapes for winemaking. Updated from his self-published version, this edition includes organic growing information and all new photography. *The Organic Backyard Vineyard* features everything a wine lover needs to build and care for a backyard vineyard.

"In simple, straightforward, yet extremely knowledgeable terms, Powers takes home gardeners through the logical steps in planning, implementing, and maintaining a home vineyard... a good bottle of wine may now be as close as their own backyard." — *The East Oregonian*

Technical Viticulture Books

These books are for experienced growers who would like to expand their expertise or are looking for answers to their wine grape growing problems.

Grape Growers Handbook, A Guide To Viticulture for Wine Production

By Ted Goldammer, July 2015, Apex Publishers
<http://www.wine-grape-growing.com/>

Publisher's note: The new revised edition of the *Grape Grower's Handbook* is a complete rewrite and provides the grower with a broad spectrum of expertise and knowledge in growing grapes for wine grape production in commercial vineyards. Some books offer a strong academic perspective with little practical application on growing grapes for wine production, others books offer a broad overview on growing grapes but provide little detail while most books narrowly focus only on more traditional topics of grape growing. Unlike most books on growing grapes for wine production the *Grape Grower's Handbook* is meant to be a stand-alone publication that describes all aspects of wine grape production. The book is written in a nontechnical format designed to be practical and well suited for field application.

Viticulture Volume 1 & Volume 2

Edited by Brian Coombe and Peter Dry

Publisher's note: Since its release in 1988 *Viticulture Volume I Resources* and its companion book *Volume II Practices* have become definitive texts in viticulture throughout the English speaking world.

Viticulture Volume 1: Resources (Pre-planting decisions)

Edited by Brian Coombe and Peter Dry, 2nd edition (2005), Winetitles (Australia), available at US bookstores and online

Publisher's note: A comprehensive reference book on Australian viticulture devoted to matters that concern pre-planting decisions. Topics include grape growing regions of Australia, soils, climate, grapevine varieties, vineyard site selection and berry development and grape quality.

Viticulture Volume 2: Practices (Practical Aspects of Operating a Vineyard)

Edited by Bryan Coombe and Peter Dry, 2nd edition (2006), Winetitles (Australia), available at US bookstores and online

Publisher's note: Volume 2 covers the practical aspects of operating a vineyard and getting the best from grapes. It deals with propagation, establishment, trellising, pruning, canopy management, irrigation, soil management, nutrition, pests, diseases, harvesting, drying of dried fruit.

General Viticulture

By J. Winkler (Author), James A. Cook (Author), William Mark Kliever (Author), Lloyd A. Lider (Author), Laura Cerruti (Editor),
December 1974, published by University of California Press
<http://www.ucpress.edu/book.php?isbn=9780520025912>

While this book published in December 1974, it remains one of the "primers" on California viticulture.

Publisher's note: Wherever grapevines are cultivated, this book will be welcome because it fills a long-standing need for a clear, concise treatment of modern viticulture. During the past fifty years, more progress has been made in the science and art of growing grapes for table use and raisin or wine production than in any previous century.

This new edition has been revised throughout. The chapters on vine structure, vine physiology, the grape flower and berry set, development and composition of grapes, and means of improving grape quality add to our knowledge of the vine and its functions. The text is designed to enable those concerned with either vine or fruit problems to arrive at considered diagnoses. The student will find the text and the cited references a comprehensive source of information.

UC Agriculture and Natural Resources
Grapes and Grape Products Publications
(Free and for sale)

<http://anrcatalog.ucdavis.edu/Items.aspx?hierId=160200>

Grape Pest Management, Third Edition

Publication Number: 3343, \$100

This book is a must for anyone with a vineyard.

The new edition, the first in over a decade, includes several new invasive species that are now major pests. More than 70 experts have consolidated the latest scientific studies and research into one handy reference.

UC IPM Pest Management Guidelines

Publication 3448, Free (download PDF)

Download a free copy of these UC-approved guidelines for pest monitoring techniques, pesticide use, and non-pesticide alternatives -- essential tools for anyone making pest management decisions in the field.

Vineyard Pest Identification and Monitoring Cards

Publication Number: 3532, \$25

Keep your vineyard healthy by staying on top of pest activity with this pack of 50 sturdy, pocket-size laminated cards. This is the perfect quick reference to identifying and monitoring vineyard diseases and pests.

Wine Grape Varieties in California

Publication Number: 3419, \$30

This is a "must-have" for everyone who loves California wines. Inside you'll find information on 53 varieties grown in California, each highlighted by close-up photography of its clusters, leaves, and leaf shoots – 107 lush color photos in all.

Organic Winegrowing Manual

Publication Number: 3511, \$35

This manual provides detailed information for organic as well as conventional wine grape growers on production issues, economics, weed and disease management, the conversion process, and organic certification and registration.

Viticulture Websites

University of California Websites

The California Garden Web

The UC Master Gardener Program designed the California Garden Web to serve as a portal to organize and extend the University of California's vast collection of research-based information about gardening to the public. The California Garden Web focuses on sustainable gardening practices and uses a question and answer format to present solutions.

Garden Web: Growing Grapes (table, wine, raisins) in Your Backyard

http://cagardenweb.ucanr.edu/Growing_Grapes_in_the_California_Garden/

- Overview
- What are the sunlight, soil, and space requirements for a backyard vineyard?
- When would I use rootstocks?
- What varieties are best for my backyard?
- What do I need to know about growth and fruiting?
- How do I
 - propagate new vines?
 - provide structural support for the vines?
 - plant and care for young vines?
 - train and prune mature vines?
 - manage the canopy and clusters in the spring?
 - manage insects, diseases, weeds, and other pests and disorders?

UC IPM, Statewide Integrated Pest Management Program

The UC Statewide IPM Program provides practical information on pest management techniques and identification for a broad range of California pests. Management suggestions apply to California, but they may be useful in other areas also.

The information on the following site was written for the home gardener and includes cultural tips as well as information on pests and disorders of grapes:

<http://ipm.ucdavis.edu/PMG/GARDEN/FRUIT/grapes.html>

Cultural Information

- Fertilizing
- First-year and second-year pruning
- Harvesting and storage
- Planting

- Sanitation
- Site selection
- Thinning
- Training and pruning
- Trellising
- Watering

Pests and Disorders of Grapes

- Invertebrates (insects, mites, mollusks, and nematodes)
- Diseases
- Environmental disorders
- Vertebrates (birds, mammals, and reptiles)
- Weeds

UC Integrated Viticulture

<http://wineserver.ucdavis.edu/#/>

Viticulture is the art and science of growing grapes. Every detail matters and a great deal of attention has been paid to growing conditions, the differences between grape varieties, and protecting the plants from pests and diseases. Here, you will find publications, video seminars, and useful links on relevant topics from research by the University of California.

Grape and Grape Product Publications:

<http://anrcatalog.ucdavis.edu/Items.aspx?hierId=160200>

This website is designed and maintained by the University of California Division of Agricultural and Natural Resources (ANR).

UCCE Viticulture Websites

The mission of the University of California Cooperative Extension (UCCE) is to enhance the quality of life and the environmental and economic well-being of the citizens of California through research and education. Cooperative Extension farm, natural resources, 4-H, and nutrition, family and consumer sciences advisors extend knowledge and provide county research in more than 50 county offices in California. Specialists housed on University campuses conduct research, provide information for dissemination, and leadership for statewide programs. UCCE is a part of the Division of Agriculture and Natural Resources (ANR) of the University of California.

The UCCE sites listed below include general as well as area-specific wine grape growing information that Placer County growers will find relevant.

UCCE Placer/Nevada County, Viticulture

<http://ucanr.edu/sites/placernevadasmallfarms/Crops/Grapes/>

The Sierra Foothills have a young, rapidly growing wine industry, composed of small vineyards and a few small wineries. Most of our grapes are grown between the elevations of 1000 and 2500 feet, which gives us just the right day-night temperature differential to produce very high quality grapes. Most of the grapes grown in the foothill counties are red, but we grow a wide range of varieties, many of them the lesser known varieties that are in demand for blending.

Grape Production

- Growing Grapes in the Foothills - an overview of getting started in growing grapes, compiled by the UCCE Placer/Nevada.
- UC Integrated Viticulture - publications, video seminars, and useful links on relevant topics from research by the University of California.
- UC IPM Online - Integrated Pest Management information for grapes.
- Importing Grape Planting Stock - from UCCE, information on restrictions and quarantines for grapes due to disease and pests.
- Powdery Mildew - powdery mildew has a particularly high impact on grape production. Read this UCCE publication for the key points in powdery mildew management.

Getting Answers to Your Questions from UCCE, Placer County

- Placer County home gardeners (non-commercial) with grape growing questions should contact the master gardener office at (530) 889-7388.
- Commercial growers may contact the farm advisor for advice and assistance at (530) 889-7385

UCCE Sonoma County, Viticulture

<http://cesonoma.ucanr.edu/viticulture717/>

Winegrape production in Sonoma County totals over four hundred million dollars annually and accounts for the greatest revenue of all agricultural crops in the county. The viticulture program provides education and outreach to winegrape growers to improve viticultural practices and address issues facing viticulture in the county.

- Grape Day
- Viticulture Newsletter Online: Topics covering winegrape production including Integrated Pest Management
- Grape Pests and Diseases
- Vineyard Irrigation
- Viticulture Frequently Asked Questions
- Industry Reports, Newsletters and Symposia
- Viticulture Publications
- UC Integrated Viticulture: <http://iv.ucdavis.edu/>
- Weather and Climate Data
- Frost Protection

UCCE Central Sierra, Viticulture

<http://cecentralsierra.ucanr.edu/Agriculture/Viticulture/>

- Grape Pest Management Manual
- Growing Wine Grapes
- Cover Cropping
- Crush Report
- Foothill Soils
- Frost Protection
- Grape Day Presentation
- Grapevine Nutrition
- Powdery Mildew Stations
- History of Wine Grapes in the Foothills
- Viticulture Resources
- Foothill Grape Day 2014
- On-the-Road Workshop

Other Viticulture Websites

IMPORTANT — Please note that California has more restrictive regulations than other states, especially regarding the use of pesticides. Home growers need to ensure that pest control recommendations made on the following sites comply with California regulations.

eXtension

<https://impact.extension.org/>

eXtension's mission is to increase the United States Cooperative Extension professionals' effectiveness in addressing issues of importance to the nation. eXtension provides up-to-date science, evidence-based information and education to Extension professionals and the general public.

eXtension's Viticulture Discussion List

The Viticulture Discussion list is sponsored by the eXtension Grape Community of Practice and hosted by the Texas AgriLife Extension Service. The purpose of the list is to encourage and facilitate communications among all individuals interested in the commercial production of grapes. The Viticulture list is a forum for discussion of viticulture production practices, problems, research results, marketing, or industry issues

<https://articles.extension.org/pages/33764/viticulture-discussion-list>

Includes the following viticulture resources:

- Starting a Vineyard
- Managing the Vineyard
- Vineyard IPM
- The Business of Growing Grapes
- Muscadines
- Table Grapes
- More about Grapes and eViticulture
- Wine
- Viticulture Research and Videos

Texas Winegrape Network

The Texas Winegrape Network is a comprehensive Internet resource providing research-based information and communication services for commercial grape and wine producers. The network comprises the primary informational website that you are currently accessing and the largest international listserv devoted to commercial viticulture, the Viticulture Discussion List. Two special topic websites are also part of the network: the Winegrowing Regions of Texas geographic information system and the SERA-14 website.

Texas Winegrape Network: Grape Growing

<https://winegrapes.tamu.edu/grow/grapegrowing.html>

This portal contains Texas AgriLife Extension fact sheets and guidelines for growing grapes in Texas. Our fact sheets provide general recommendations and considerations for Texas conditions, although much of the information can also apply to other grape growing regions. A group of eight fact sheets covers topics pertaining to vineyard establishment. Additional fact sheets address topics of concern in vineyard management. Many of these fact sheets contain links to external websites with related content. These external websites are carefully selected from credible sources, but we cannot guarantee the reliability of their information.

- Starting a Vineyard
- Vineyard Management
- Diseases, Pests, Problems
- Organic Production
- Economics and Business

Vineyard Team

<http://www.vineyardteam.org/about/index.php>

Fifteen Years of Innovation and Leadership in Sustainability

- We are a 501c3 non-profit grower-group dedicated sustainable winegrowing since 1994.
- Our supporters have increased the adoption of environmentally friendly farming practices, measured by over a decade of data collection and research.
- Our growers regularly share their farming knowledge with others through a robust grower-to-grower outreach program.
- As a result of our field and educational programs, growers reduce erosion and pesticide use, protect water quality, improve biologic diversity, and honor their workers.

Viticulture Classes

UC Davis Extension

UC Davis Extension, the continuing and professional education arm of UC Davis, is an internationally-recognized leader in educational outreach for individuals, organizations and communities. Ongoing courses are offered on vineyard establishment, irrigation, etc. through the UC Davis Extension program.

UC Davis Extension, Viticulture and Enology Courses

From integrated pest management and cover crops to wine chemistry and filtration, learn about the cultivation of grapes and the science of wine and winemaking in the following courses listed at:

<https://extension.ucdavis.edu/subject-areas/viticulture-and-enology-0>

The Extension program previously offered a series of courses called the *Small Vineyard Series*. The classes are not currently available, but gardeners interested in the first class in the series, *Establishing and Managing a Small Vineyard* (described below) can sign up to be notified when the class becomes available.

Establishing and Managing a Small Vineyard

Learn to establish and manage profitable small vineyards with in-depth instruction and hands-on learning in this workshop designed for the grape grower, winemaker, viticulturist and apprentice viticulturist in the heart of Napa Valley at our Oakville Experiment Station.

Day one topics include:

- Site selection to avoid frost and freeze events
- Site preparation and amendment
- Trellis selection to manage vineyard vigor
- Soil preparation and amendments to ensure profitability
- Cultural practices focusing on practical aspects of management
- Irrigation system design and simplified irrigation scheduling for productivity
- Quality and harvesting decisions

Day two will be spent in the vineyard, examining vineyard instruction on trellis types, pruning, irrigation system design and sprayer calibration.

To be notified when this course is available, go to:

<https://extension.ucdavis.edu/subject-areas/viticulture-and-enology-0>

Sierra College Community Education

<http://www.sierracollege.org/>

Community Education provides classes and activities to meet the needs and interests of our diverse community for enrichment, personal and professional growth. The *Kaleidoscope* schedule of not-for-credit, fee-based classes is published in spring, summer, and fall.

The following viticulture classes have been offered in previous years. Please check the website above for availability;

Wine Grape Pruning

This hands-on session provides practical experience in the pruning and tying of wine grapes by performing these cultural practices in a producing commercial vineyard. Pruning strategies and procedures to control vine vigor, optimize yield, and maintain vine health will be described and demonstrated during the workshop. Check the *Kaleidoscope/Spring* schedule or call (916) 781-6280 for more information

Establishing a Small Vineyard

Receive a step-by-step guide to the development and operation of a small vineyard for wine grape production. You will be introduced to vineyard design, planning, planting, cultural practices, grapevine physiology, pest management, irrigation and costs. We will also discuss the practical aspects of producing quality wine grapes, including tasting the wine from many varieties. No prior experience needed. Participants must be 21 or over. Check the *Kaleidoscope/Fall* schedule or call (916) 781-6280 for more information.

Grape Grower Organizations

Local and Statewide Organizations

Learn from the success (and mistakes) of others and expand your knowledge of wine grapes by reaching out to other growers.

Sierra Wine & Grape Growers Association

<https://swgga.org/>

Founded in 1976, the Sierra Wine & Grape Growers Association represents home winemakers and the farmers and their families who grow grapes in Nevada County, and adjoining Yuba, Sierra and Placer Counties in California.

Our membership is available to those who either own a vineyard or are simply interested in being a member of the organization.

Our members are interested in continually increasing their knowledge of viticultural practices in the northern Sierra Foothills, to produce premium grapes for high quality wines.

Placer County Wine & Grape Association

<http://www.pcwga.org/>

Established in 1999, the Placer County Wine and Grape Association (PCWGA) is a non-profit 501(c)(3) public benefit corporation established to promote the making of wine and the growing of wine grapes on both a commercial basis and as a hobby. PCWGA provides educational programs to its members and the public, encourages the use of ecologically sound and sustainable agricultural practices, and serves as an advocate for the wine and grape industry in public and government matters.

The topography, soil, and climate of Placer County are perfect for wine grapes as it is similar to Southern France and Italy both in temperature (heat summation) and soil content. In the long summer months, grapes are easily ripened to perfection culminating in wine that is rich and deep in color and flavor.

Join us in building a vibrant, local wine community for winemakers, grape growers, and wine enthusiasts.

Placer County Vintners Association

<http://placerwine.com/about.htm>

Established in 2010, the Placer County Vintners Association (PCVA) is a 501(c)(6) non-profit trade association formed to promote the commercial wine industry in Placer County. Our members are commercial wineries (see "Wineries" menu link for list of current members). PCVA actively hosts and promotes a growing wine trail, "The Placer County Wine Trail," partners with the local community for charitable events and causes and strives to promote a positive business environment for the growth and production of Placer County wines and wineries.

California Association of Wine Grape Growers

<http://www.cawg.org/>

The California Association of Winegrape Growers (CAWG) is the only statewide organization specifically focused on advocacy for all California winegrape growers. As the voice for the California winegrape industry, CAWG helps to ensure the implementation of sound public policies through its vigilance and action on state and federal legislation, its advancement of sustainable farming practices, and promotion of education and research to enhance the California winegrape industry.