



Small Farm News

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Small Farm Center • Cooperative Extension • University of California

SFP's Blueberry Project

by Desmond Jolly, director, SFP, and extension economist, Department of Agricultural and Resource Economics, UC Davis.

One of the Small Farm Program's (SFP's) areas of core competence is development of new niche crop opportunities for California's small-scale farmers. Our *Specialty and Minor Crops Handbook* is a valuable resource that has helped spark a specialty crop explosion in California and beyond. Our farm advisors continue to conduct research and transmit information and best practices to our farmers. A major thrust over the past decade has focused on adapting blueberry culture to California. Blueberries have great potential for small-scale specialty crop production for a plethora of reasons, including their consumer appeal and emerging information on production requirements for various agroclimatic regions.

Consumer Appeal

The romance with blueberries goes back a millennium or more. First Nation-Native Americans called blueberries "star berries" because the calyx at the blossom end of the berry forms a perfect five-pointed star, and the "star berry" featured prominently in Native American legends. As far back as 13,000 years ago,



Native Americans cherished blueberries as a medical ingredient—shamans brewed the roots to make a tea, which was given to relax women during childbirth. The brew was also used to purify the blood. The berry was added to soups and stews and was rubbed on meat as a flavoring. Native Americans dried and smoked the berries for off-season consumption. Reportedly, one of the first meals Lewis and Clark shared with Indians was venison with a blueberry rub. The North American blueberry is closely related to the European bilberry, which has been used in European folk medicine for centuries.

Blueberries and Health—The Research

Modern scientific research is now confirming the folk knowledge of Native Americans and other cultures; blueberries can heal as well as preserve health. The active ingredients are **anthocyanins**, one of the **phytochemicals** found in fruits,

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SFP Project Updates

Developing New Niche Crops

The UC Small Farm Program (SFP) partnered with California's Department of Food and Agriculture (CDFA) to develop new opportunities for niche crops in California through research and outreach. Research results have produced information on "best practices" for optimum niche crop production, post-harvest management, and marketing. Papaya, guava, nopales, tomatillos, blueberries, edamame, and green tea are just a few examples of crops currently being examined. This project continues to serve the small-scale and limited-resource farmers who have been our focus for more than two decades. Check the *Small Farms News* calendar and our website for field days and events this spring and summer.



Risk Management Education for California's Small-Scale and Limited-Resource Specialty Crop Producers

SFP also partnered with the United States Department of Agriculture (USDA) Risk Management Agency to facilitate risk management education for small-scale and limited-resource specialty crop producers. SFC, in collaboration with small farm advisors, organized and facilitated

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Director's Message

Our Own Reality Survival Program

Pheeew!!! That was a close call!!! The Governor's 2003–2004 budget exacted cuts to University of California's budget. It was then determined that outreach and research would take the big hits rather than classroom instruction. The university's president allocated a budget reduction target to the Division of Agriculture and Natural Resources (ANR), which in turn decided that a key strategy toward meeting the target would be to "disestablish" most of its statewide programs, consolidating their functions in a "virtual center". The "disestablishment" of statewide programs, including SFP, was put forth in the division's White Paper, *ANR: An Improved Statewide Organization*, in September.

SFP was scheduled to disappear, along with many other programs, on December 31, 2003. But stakeholders, perhaps including you, intervened in the process with ultimately beneficial results. Many of our associates wrote to ANR's vice president, Reg Gomes, citing the value of the program to their farming operations. Elected public officials, from the state legislature to county boards of supervisors, communicated their serious concerns. As a result, Vice President Gomes decided to recall the proposal and to instead empanel a working group of external stakeholders and internal staff

to assess the value of the statewide programs and draft proposals for their future roles and structure within ANR.

Citing a list of current and emerging problems that face the state, the working group's final report stated:

ANR's Statewide Programs are a key component of the University's ability to deal with these problems and to be seen as a more relevant, service-oriented organization. In terms of staff numbers and funding, Statewide Programs are only a small fraction of the total resources of ANR, but they are critical to identifying pathways for solving these problems and for building the teams to do so. The challenge is to further empower the Statewide Programs to influence and lead ANR's efforts in addressing significant issues facing California.

The vice president has yet to issue a final decision on disestablishment or reorganization, but we are still here and we are, though impaired by a loss of a third of our University budget (\$50,000), still functioning to the benefit of California's and the nation's small family farmers. Thank you to all those who called or wrote on your program's behalf.




Desmond Jolly

25th Anniversary Celebration Planned for November

SFP owes its genesis to social ferment in the 1960s and early 1970s that demanded that opportunity be extended to disadvantaged segments of society—in our case,

small-scale and minority farmers who had not had access to the University's research and technical assistance. A receptive state legislature acceded to advocates of targeted research and outreach to meet these farmers needs and allocated funds for salaries and support for six farm advisors.

We've come a long way and accomplished a great deal since 1979. Through four successive directors, these 25 years have been eventful, and our sustainability and achievements are worth celebrating. So this November we will celebrate our 25th Anniversary with a conference, *From the Ground Up—Innovating and Cultivating a Wealth of Agricultural and Food Alternatives*, at UC Davis November 14–16.

There have been many seminal innovations in how Californians practice agriculture, produce food and fiber, and market and consume products. We will cover a number of these key innovations that have made the California food system more interesting and, to a large extent, more sustainable. We hope you will plan to attend (*See announcement on back cover*). ■



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The *Small Farm Center* links those who need information on small-scale farming with those who have the information. The Center produces publications and a newsletter; sponsors conferences and seminars; holds a library of periodicals, reports and books; gives referrals; and answers numerous requests for information.

Readers are encouraged to send us information, express views, and contact us for assistance. Mention of a specific product is intended for readers' information or as an example of a similar product—not as a recommendation of that specific product.



program news

Director Desmond Jolly Receives Achievement Award and Co-Chairs Roots of Change Council

At its February 7 awards dinner, the California Small Farm Conference presented **Desmond Jolly**, agricultural economist of UC Davis and director of SFP, with its *Individual Achievement Award* for his career of contributions to the conference and for outstanding professional leadership on behalf of small-scale farmers at local, state, and national levels. He served as vice chair of the National Commission on Small Farms. He also contributed to development of the United States Department of Agriculture (USDA) Cooperative State Research, Education, and Extension Service's Strategic Small Farm Plan and was a member of USDA's National Advisory Board for Research, Extension, Economics and Education. Jolly served on planning and steering committees for the First, Second, and Third National Small Farm Conferences and was a keynote speaker at the Second National Small Farm Conference.

Dr. Jolly also was recently elected co-chair of the *Roots of Change* (ROC) Council. The Council includes leaders from California's agriculture and food systems who advise the ROC Fund, a collaborative of private foundations in California. The key objective of the initiative is to identify critical opportunities to expedite the transition to more sustainable agricultural and food systems in California. So far, the initiative has garnered more than \$2 million to fund strategic projects and already funded more than half a million dollars worth of projects. Dr. Jolly co-chairs the Council with Professor Steve Gliessman of UC Santa Cruz. Other members include Richard Rominger, former deputy director of USDA; Larry Yee, UC Cooperative Extension county director; Leonard Diggs, an instructor at Santa Rosa Junior College and member of SFP's advisory committee; Jose Montenegro, founder and director of The Center for International Sustainable Development; Alice Waters, famed owner of Chez Panisse; Ann Evans, director of Yolo County Slow Food; and Joan Gussow, professor emeritus from Columbia University.

Sabbatical Leave

Richard Molinar, small farm advisor in Fresno County, will be on sabbatical from January 2004 through December 2004. He plans to travel throughout the year to visit small farm programs overseas as well as throughout the United States seeking new crop alternatives for California producers. Mr. Molinar leaves for Australia in April.

Manuel Jimenez, small farm advisor in Tulare County, will also be on sabbatical this year and will return in April 2005.

Grants

SFP recently won a competitive grant from USDA to conduct an outreach program on behalf of disadvantaged farmers and ranchers. The approximately \$300,000 grant will enable SFP to intensify and widen its outreach to ethnic minority farmers in Central California and focus mainly on disadvantaged farmers in San Joaquin, Fresno, Tulare, Santa Clara, San Benito, and Santa Cruz Counties.

The program is also in the **second phase of implementing a \$150,000 Specialty Crop grant** from the California Department of Food and Agriculture's "**Buy California Initiative**". Farm advisors are conducting research on a wide range of niche crops to provide best-practices information to farmers who are planning to diversify their current cropping systems.

SFP 25th Anniversary

SFP will mark its 25th anniversary with a **conference November 14, 15, and 16**. See the *Director's Message* and the back page of this newsletter for more information.

Presentations

SFP farm advisor Mark Gaskell presented a paper entitled *Field Tunnels Permit Extended Season Production of Small Fruits in California* at the International Society for Horticultural Science Symposium—*Protected Cropping in a Mild Winter Climate*—held March 23–28 in Orlando, Florida. For more information about the symposium, visit <http://conference.ifas.ufl.edu/ishs>.

New Staff

Joe Marcotte, a recent UC Davis International Agricultural Development M.S. degree recipient, began working at SFC in November. He joins the SFC team as a postgraduate researcher and project coordinator.

BLUEBERRIES – FROM PAGE 1

vegetables, and other plant sources. These phytochemicals protect the body's cells against "free radicals"—chemicals that damage our cells. Antioxidants work against oxidation. Dr. James Joseph, chief of United States Department of Agriculture's Human Nutrition Research Center on Aging in Boston, found that blueberries may reverse short-term memory loss and forestall other effects of aging. At the University of Illinois, Mary Ann Smith looked at the impacts of flavonoids in blueberries and found an anticancer effect. Amy Howell of Rutgers says blueberries contain compounds that can prevent urinary tract infections, and blueberry anthocyanins are associated with effects such as reducing eyestrain and improving night vision. Their effect on macular degeneration is being studied. In Japan "wild blueberries" have been labeled as "vision berries."

Little wonder that apart from keeping qualities, taste, and convenience, blueberries' health implications have helped to increase their sales by 50 percent over the past decade. More than 200 million pounds of blueberries are currently produced annually in the U.S. ■

You can access research reports relevant to blueberries in California through our website at www.sfc.ucdavis.edu. Just use the search feature on the website—keyword: blueberry—and download articles at your convenience.



Highbush blueberries.

Growing and Marketing Blueberries

from "Blueberries" by J.D. Kindhart, University of Illinois, and George B. Holcomb, Office of Communications, U.S. Department of Agriculture, Office of Small-Scale Agriculture, 1994 with adaptation for California by Desmond Jolly.

Marketing Blueberries

The blueberry is delicious as a fresh fruit snack or in a variety of foods like blueberry pies and muffins. A large share of blueberries are direct-marketed locally through pick-your-own (PYO) operations, farmers markets, and ready-picked sales to nearby stores, particularly among small-scale operators near metropolitan areas. Potential trade areas for blueberries tend to be larger than for strawberries. Blueberries also offer advantages over strawberries for PYO operations. They require little stooping, customers find them easy to freeze, and preparation consists simply of washing. Consumers who do not want to pick their own will pay a higher price for ready-picked blueberries sold at farmers or local markets. Weekends are usually the busiest. Coordinating sales, advertising, and promotion with peak harvests is challenging, even for experienced growers.

PYO growers must be market oriented, plan far in advance, seek alternative markets, train employees, and develop successful advertising, especially a good farm logo. Before starting any small-scale enterprise, study potential markets, trade areas, competitors, and advertising mediums. About 450 customers can harvest an acre of blueberries (15,000 pounds), which are usually sold by weight. Scales used for sales should be inspected by the Weights and Measures Division of the California Dept. of Agriculture or Commerce.



Consumer pack from Whitney Ranch.

A direct market business requires time to develop. Blueberries lend themselves nicely to market development because they require six years or more to reach maximum yield. Careful attention to a business image, including the logo, quality of fruit, and how fields are maintained, is essential. A direct marketer should exceed customer expectations. Merely raising high-quality blueberries is not enough.

Customers enjoy the recreational aspect of a trip to a country farm as much as obtaining high-quality produce at reasonable prices. They want well marked roads, adequate parking, and friendly courteous service.

Highbush Blueberries

Highbush blueberries can be cultivated throughout much of the U.S. with careful site selection and proper cultural practices. They fit nicely into small-scale farming. Early and late varieties can be harvested from early March into December in California.

Growing highbush blueberries is labor and management intensive. Plantings require two to three years to become established and are not harvested until the third or fourth growing season. Many things can go wrong during the first year, and a good working knowledge of blueberry biology, cultural practices (including weed and disease control), and pest management is essential (information on pest control practices

is available from UC small farm advisors). Per-acre returns can be high. A mature planting can gross between \$30,000 and \$50,000 per acre with good marketing and management.

Site and Pre-Planting Considerations

In choosing a site, consider the water source for irrigation. Also, PYO operations must be readily accessible and near parking areas. Ideally, blueberries should be planted on a gently rolling slope to provide good air circulation and water drainage. Air circulation reduces the likelihood of blossom damage from late spring frosts. Blueberry roots are sensitive to standing water, so they need good surface and internal drainage. Although sandy soil is best, heavier soils can be used if internal drainage is adequate. This may require planting on ridges or placing tiles to improve drainage.

Blueberry plants are highly sensitive to soil pH; soil must be acidic for them to succeed. Optimum soil pH is 4.8 to 5.2; however, levels as high as 5.5 are acceptable. The pH can be reduced gradually through acid-reaction fertilizers. Soils with pH levels of 5.5 to 6 can be used if the soil's pH is reduced by using agricultural sulfur one year or more prior to planting (test the soil just before planting to ensure proper pH). The amount of sulfur required to lower the pH varies with soil type—for some soils, adjustment may not be economically feasible.

Planning should begin at least one year prior to planting blueberries. This schedule allows for adjustments to soil



Small Farm Advisor Manuel Jimenez discusses cultural practices with blueberry growers.

pH, tiling, ditching, and water development. During this time, it may be possible to control perennial weeds that are difficult to eliminate with herbicides

once the blueberries have been planted. A green manure crop of rye or wheat can be grown and then turned under to improve soil tilth. Any cultivated crop grown during this preparatory year can help

reduce insect and weed problems. If herbicides are used in preparing the site for blueberry production, be aware of time limits for degradation of the herbicide residues in the soil.

Plant Selection

Cultivars (cultivated varieties) are key to success and must be selected a year ahead and booked with a reputable

nursery. UC small farm advisors offer information on which cultivars are best adapted for local use. Visits to existing growers and nursery professionals are also helpful. Most nurseries offer rooted cuttings, two-year-old bare-rooted field-grown plants, and two-year-old containerized nursery stock. Many small-scale operators prefer containerized stock for its increased survival and earlier production. If containerized stock is used, pick up the plants at the nursery to eliminate shipping expenses.

Field Layout

Blueberries benefit from cross pollination, so growers should alternate cultivars with similar flowering seasons in alternating blocks of two to four rows. Rows ideally run north to south to provide uniform sunlight, but any orientation is acceptable. Blueberries are normally grown in widely spaced rows with the area between rows seeded down to a perennial cover such as Kentucky bluegrass or fescue. Row spacings of 10 to 14 feet or more allow for mowing and spraying by tractor. Spacing within the row is commonly four or six feet.

Fields for PYO operations should be planted with customers in mind. Interrupt rows with crosswalks or drive alleys about every 200 feet and arrange cultivars with similar ripening seasons together so that the harvest can progress efficiently.

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Small Farm Advisor Aziz Baameur discusses proper planting techniques.



Mulched raised beds in Santa Cruz ready for blueberry field trials.

UPDATES – FROM PAGE 1

a mobile specialty crop outreach event, *Specialty Crop Jamboree '03*, that traveled to several locations to reach a diverse group of California's specialty crop producers. At the jamboree we delivered targeted risk management education and products regarding farm management, alternative marketing, agritourism, and specialty crop production and marketing potential. We also organized workshops and field days throughout the year as an outreach tool for training farmers on production, marketing and risk management best practices.

Outreach to Underserved Farmers

SFP is partnering with the USDA's Cooperative State Research, Education, and Extension Service to intensify outreach efforts and technical assistance



Small Farm Advisor Richard Molinar (left) and SFP Representative Michael Yang (center) in the field.

to socially disadvantaged farmers and ranchers to build capacity and provide the skills necessary to own and operate farms and ranches in California. Our efforts throughout this project will focus on farm management, marketing, and on-farm production practices with the intent that farmers and ranchers will increase their use of outreach and assistance agencies, programs, and organizations leading to more adept production management, record keeping, economic decision

making, risk management, business planning, and market access and management. This project is underway and will continue through 2006.

Risk Management Education for California Women Farm Operators

This project, initiated in 2003, provides risk management education materials and assessment tools to small-scale women farmers and ranchers in California.

Farmers Market Education Curriculum

SFP is in the process of completing a farmers market manager's professional development curriculum. Selected units will be available for download on our website later this year.



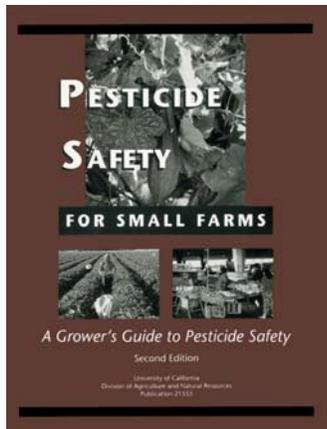
Specialty Crop Field Day participants choose among samples of personal watermelons.

Spotlight on Current Small Farm Advisor Research

Mini Watermelons

Consumer trends indicate a preference for smaller seedless watermelons over the larger more traditional seeded varieties. Even smaller "icebox" size melons (6 to 12 pounds) became widely available during the past five years and have grown in popularity. The newest melons hitting market stands are "mini personal" melons that weigh as little as 3 pounds. Small Farm Advisor Richard Molinar of Fresno County and UCCE Advisor Shannon Mueller evaluated 12 varieties of "mini" watermelons for taste, rind thickness, and flesh color. For a summary of the results, please go to www.sfc.ucdavis.edu.

Richard Molinar and SFP Representative Michael Yang also recently completed a grape-tomato variety trial where Jellybean and Santa varieties emerged as top choices when compared by yield, fruit size, taste, and Brix. The results of this study, including images, are available at www.sfc.ucdavis.edu/research/molinar.html. 



Pesticide Use and Food Safety among California Small-Scale Farmers

SFC continues to work on this ongoing project funded by the National Institute of Occupational Safety and Health, USDA, and the UC Davis Center for Health and the Environment. This project has been successfully operational since 1997 and continues to serve limited-English-speaking and other small-scale farmers. To date, we have been working to identify, document, and improve pesticide use and application practices to minimize exposure risks, enhance farm household safety, and reduce environmental degradation.

Recent project products include the *Pesticide Safety for Small Farms* video, with a script that is now available on audiocassette in English, Hmong, Spanish, and Lao. As a leaflet, this information is available in Lao, Hmong, Korean, and Tongan. To learn more about these products, visit SFC's website (www.sfc.ucdavis.edu) or the ANR's catalog online (<http://anrcatalog.ucdavis.edu>). New research projects currently in progress are exploring integrated pest management strategies that reduce pesticide applications, improve farm safety, and conserve natural resources.

Programs and Events

Specialty Crop Jamboree '03

Specialty Crop Jamboree '03 was a huge success this past year. Research and outreach on exciting new crops in California has created interest on the part of farmers and demand on the part of consumers. With this past year's successful specialty crops research and outreach on blueberries, edamame, capers, and papaya, to name just a few, there are many farmers in the process of integrating these new crops into their farming systems. Count on more cutting-edge research and outreach on new fruits and vegetables for California growers in 2004.

California Farm and North American Farmers' Direct Marketing Conference

SFC cosponsored this February's *California Farm and North American Farmers' Direct Marketing Conference* in Sacramento. More than 600 people attended the events and proceedings. Small Farm Advisor Mark Gaskell presented a talk on direct marketing and creative diversity with reference to blueberries.

For additional details about the proceedings, visit www.californiafarmconference.com. Mark has also written several articles on blueberries that can be accessed on the SFC website at www.sfc.ucdavis.edu/research/blueberryupdate.html. 



Many new varieties of peppers and tomatoes were featured at a field day last August, part of *Specialty Crops Jamboree '03*.



UC ANR Vice President Reg Gomes addresses participants at a *Specialty Crop Jamboree* field day. Looking on is Small Farm Advisor Manuel Jimenez (left).



Our growing online library and search engine provide user-friendly access to cutting edge research and outreach information. Join the thousands of users who visit us daily at www.sfc.ucdavis.edu.

resources



Publications

CD: Blueberry Field Day

This CD contains audio and video presentations from the May 2003 Blueberry Field Day in Tulare County. User-friendly content focused on production; managing pests, risks, and post-harvest; and marketing make this CD an excellent resource for everyone from the casual home gardener to blueberry production start-up operations.

CD: Small Farm Added-Value and Farm Management

This three-CD set, which contains a short course on adding value to farm and natural resource products, farm management presentations, production and food systems information, and marketing techniques, is currently available from SFC. The set is a comprehensive resource for the entire farming community.

Video: Capay Valley Almond Festival

The *Capay Valley Almond Festival*, which started in 1915, is now fast approaching its 90th anniversary. This videotape highlights the celebration of almonds through a successful festival and the evolving role of almonds in the local rural economy.

Specialty and Minor Crops Handbook

This updated and expanded second edition contains 63 crop profiles, a comprehensive bibliography, a glossary of Asian vegetables, and an index to common and scientific crop names.

Agritourism and Nature Tourism in California

This how-to manual is for farmers, ranchers, and the professionals who work with them. Useful as a train-the-trainer tool, the publication walks readers through starting and maintaining

an ag or nature tourism enterprise. Details range from a current evaluation of California tourism trends to evaluating your farm or ranch as a potential tourism enterprise.

A Primer on Agritourism and Ecotourism Start-ups and Management

This publication offers farmers and ranchers an introductory view of the issues involved in starting an agritourism or ecotourism enterprise. Produced by SFC and the Agritourism and Nature Tourism Workgroup, the publication is in binder format and

includes handouts and other information shared at agritourism workshops.

Pesticide Safety for Small Farms

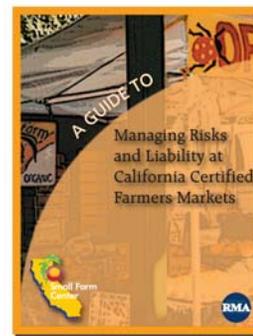
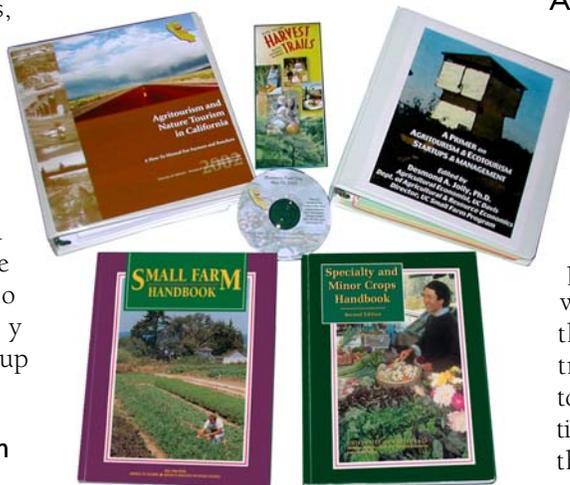
This grower's guide to pesticide safety, originally produced in English, has been translated into Lao and Spanish and is available to help farmers protect themselves and others from pesticide injury while managing for pests and protecting their investments. This resource is also available in Spanish on audiotape.

A Guide to Managing Risks and Liability at California Certified Farmers Markets

SFC partnered with the USDA Risk Management Agency to produce this handbook, which serves as a guide for safe and secure farmers market experiences for customers, vendors, and the community at large. The publication focuses on common risks associated with operating a farmers market in California and provides guidelines for managing those risks effectively to reduce the likelihood of potential liability costs.

Napa Yolo Harvest Trails

The *Napa Yolo Harvest Trails Map* is a guide to agricultural tourism destinations at more than 90 farms, ranches, wineries, restaurants, bed and breakfasts, art galleries, museums, parks, nature preserves, and other destinations in Napa, Yolo, and Solano counties. Information pertaining to farmers markets and agriculture-related festivals is also included. The map is designed to help people discover and enjoy the



To order a copy of any of these resources, please call 530.752.8136.

resources



treasures found along the area's backroads. Contact SFC today for your very own copy of *Harvest Trails* and begin your discovery of this special and little known region.

Library/Onsite Resources

The SFC resource library located in West Davis in the DANR building continues to grow and expand. Our publications and other items are available for onsite reference and research.

SFC Website

SFC's website continues to evolve and provide current information to our visitors. The new design and navigation system enhance the website's functionality and overall appearance. Our website serves as an excellent resource for



farmers, academics, agricultural professionals, tourists, and hosts of other individuals interested in small farms in California and the nation.

Seed Sources for Specialty Crops

Abundant Life Seed Foundation

A nonprofit organization that preserves the genetic diversity of plants by growing and distributing open-pollinated plants; excellent listing of heirloom vegetables. www.abundantlifeseed.org

Bountiful Gardens

Untreated open-pollinated heirloom seeds, rare grains, and herbs. Affiliated with Ecology Action. www.bountifulgardens.org

Eden Organic Nursery Services Inc.

Organically grown hot pepper and tobacco seeds and some other open-pollinated and heirloom seeds, including healing plants, herbs, houseplants, unusual vegetables, and vines. www.conseed.com

Evergreen Y.H. Enterprises

Obscure oriental vegetable seeds. www.evergreenseeds.com

Fungi Perfecti

Kits and supplies for growing mushrooms. www.fungiperfecti.com

Greenddealer

A catalogue of exotic seeds of the world with photographs and botanical information. www.greenddealer-exotic-seeds.com/seeds

www.greenddealer-exotic-seeds.com/seeds

Heirloom Seeds

Great source for heirloom vegetable, flower, and herb seeds. www.heirloomseeds.com

Irish Eyes/Garden City Seeds

Specialists in potato, garlic, heirloom, and open-pollinated seeds with a good selection for short seasons. www.irish-eyes.com

Native Seeds/SEARCH

A nonprofit organization geared at conserving southwest native crops and their wild relatives. www.nativeseeds.org

Nichols Garden Nursery

Herbs, rare seeds, and much more. www.nicholsgardennursery.com

Ornamental Edibles

Ornamental specialty vegetables. www.ornamentaledibles.com

Peaceful Valley Farm Supply

Wide selection of seeds and planting materials. www.groworganic.com

Pinetree Garden Seeds

Specializes in small seed packets for the home gardener. www.superseeds.com

Redwood City Seed Company

Alternative seed company; many unique vegetables, herbs, and flowers from around the world. www.ecoseeds.com

Seed Savers Exchange

Premiere source for heirloom seeds. www.seedsavers.org

Seedman

Tropical and exotic seeds from around the world. www.seedman.com

Seeds of Change

Organic seeds, seeds from the southwest, and heirloom varieties. www.seedsofchange.com

The Cook's Garden

Large collection of salad greens, heirloom and exotic vegetables, and herbs; many European cultivars. www.cooksgarden.com

The Pepper Gal

Specializing in more than 300 kinds of peppers. www.peppergal.com

Thunderfoot/Earthworks-Sow Organic Seeds

Carries only open-pollinated, certified organic seeds, which include heirloom varieties of vegetables, flowers, and herbs. These seeds are farm direct and untreated. www.organicseed.com

BLUEBERRIES – FROM PAGE 5

Crop Management

Containerized nursery stock can be planted in early fall—late September and early October—or early spring. Bare-root nursery stock is normally planted in the spring.

The roots of fall-set plants will continue to grow until soil temperatures fall below 45 F. Fall-planted blueberries must be mulched prior to winter in areas that experience frost heaving. They have an advantage of early spring growth, which is often missed in spring plantings due to wet weather delays. Spring planting should begin as soon as the danger of severe frost has passed.

Blueberries have shallow roots, so planting holes must be wide. Holes can be dug by hand or with an oversized, tractor-mounted posthole digger. Some growers prefer to plant in a plow furrow. Bushes should be planted as deep as they were in the nursery. Usually about one pound of moist acidic sphagnum peat moss per plant is mixed with soil during backfilling of the planting hole. The moss should be thoroughly wet prior to use; otherwise, it can draw moisture from the soil, drying out the newly set plants.

After planting, remove one-third to two-thirds of the branches from bare-root plants. This allows the plant root system to be in balance with the shoot system and increases survival by reducing transpirational demand. Use of containerized stock reduces the need for this pruning.

Flower buds should be rubbed off so energy is channeled into vegetative growth.

In most regions where highbush blueberries can be grown, both mulch and irrigation are essential. Mulch goes on newly set plants soon after planting and irrigation should be in place when the plants are set. Many materials are suitable for mulching blueberries, but sawdust is most common. Mulch keeps the soil cooler during summer, reduces weeds, and maintains more uniform soil moisture.

Mulch helps save moisture but does not eliminate the need for irrigation as blueberries are sensitive to drought. Trickle irrigation is efficient but does not provide the frost protection that overhead systems offer. In areas where late spring frosts are not a concern, trickle irrigation is normally chosen. Irrigation can then continue without interrupting spraying or harvesting.

Bird depredation can be a big problem for small-scale producers—losses can reach more than 70 percent. Scare devices and exclusion by netting are deterrents. Insect and disease problems may be limited in small plantings. Small farm advisors can provide information on weed, insect, and disease control. ■



Backfilling blueberry holes with peat moss and pomace.



Loosening root-bound plant prior to setting.



Planting at proper depth and mixing in soil amendments.

UC IPM Pesticide Safety Education Program

Avoiding Water Contamination and Pesticide Drift Workshop

English and Spanish Sessions
March 24, 2004 – San Luis Obispo, CA

Trainers of Pesticide Handlers and Agricultural Fieldworkers Workshop

English Session
April 19, 2004 – Davis, CA

Trainers of Agricultural Fieldworkers Workshop

English and Spanish Sessions
April 20, 2004 – Davis, CA
Spanish Session
April 26, 2004 – Davis, CA

For more information
call 530.752.5273 or visit
www.ipm.ucdavis.edu.

Avocado Education Series

Irrigation and Water Costs

April 13 – Ventura & San Luis Obispo, CA
April 15 – Escondido, CA

Disease Management, Harvesting, and Post-Harvest Handling

June 8 – Ventura & San Luis Obispo, CA
June 10 – Escondido, CA

Canopy Management, Fruit Quality, and Safety

Aug. 10 – Ventura & San Luis Obispo, CA
Aug. 12 – Escondido, CA

For more information
call Etaferahu Takele
909.683.6491 ext. 243.

Pesticide Applicators Professional Association

Qualified Applicators Certification Exam Preparation Course

April 19 – Arcadia, CA
July 28 – Sacramento, CA
July 29 – Arcadia, CA

For more information
call 831.442.3536.

calendar

Blueberry Meetings

April 6

Escondido, CA

San Diego County Farm Bureau, 1670 East Valley Parkway, Escondido, CA 92027.

Contact: Ramiro Lobo, small farm advisor, 858.694.3666.

April 7

Ventura County, CA

Hansen Agricultural Learning Center/Faulkner Farm, Briggs Road off of Highway 126 near Santa Paula, CA.

Contact: Ben Faber, farm advisor, 805.645.1462.

April 8

San Luis Obispo, CA

UC Cooperative Extension, 2156 Sierra Way, San Luis Obispo, CA.

Contact: Mark Gaskell, small farm advisor, 805.934.6240.

Blueberry Meeting and Field Day

May 18

Parlier, California

Kearney Research and Extension Center.

Contact: Manuel Jimenez, small farm advisor, 559.685.3309.

Organic Training

Legal Rights and Responsibilities of an Organic Marketing Operation

County agricultural commissioners' staff, organic certifiers, county farm advisors/extension specialists, and the organic production and marketing industry are invited to attend this free seminar. 10 a.m. to 3 p.m. on the following dates.

April 8 – Redding

U.S. Forest Supervisor Office
530.224.4949

April 12 – Stanislaus

Stanislaus Agricultural Center
209.525.4790

April 14 – Fresno

County Agricultural Commissioner's Office
559.456.7510

April 19 – Humboldt

County Agricultural Commissioner's Office
707.441.5270

May 21 – Bakersfield

County Agricultural Commissioner's Office
661.868.6300

For more information, please visit
www.cdffa.ca.gov/is/fveqc/organic.htm.

Greenhouse Production Workshop for the Environmental Horticulture Industry

April 29 – San Martin, CA

Contact Aziz Baameur for registration details, 408.299.2635 ext. 1010.

Fifth Annual

Central Valley Heartland Festival

A Celebration of Food, Farming and Healthy Living

May 15 and 16 – Double T Acres, Stevinson, CA

Reviving the rural tradition of celebrating local arts and families with Heartland's Central Valley Chautauqua 2004. Including kids area, presentations by local authors, bluegrass music jam, local history, historical exhibit, farm demonstrations, plant exchange, handmade ice cream, farmers market, and community banquet! Workshops on sustainable farming, alternative energy, delicious cooking, and more... Plus a "meet your watershed" rafting trip on the Merced River. For information, call the Ecological Farming Association at 831.763.2111 or send email to info@eco-farm.org.

SFP 25th Anniversary Conferences

Specialty Crops Conference

May 26–27 – San Diego County, CA

Contact Ramiro Lobo, small farm advisor, 858.694.3666.

From the Ground Up — Innovating and Cultivating a Wealth of Agricultural and Food Alternatives

November 14, 15 and 16 – Davis, CA

Stay tuned for more information about this celebratory conference this fall. Contact the Small Farm Center, 530.752.8136.

Sustainable Agriculture and Organic Farming: Principles and Practices Course

June 21–August 13 – Davis, CA

This course is offered through the UC Davis Student Farm and is open to all qualified applicants, including nonstudents, with the instructor's permission. Enrollment is limited and qualified applicants are admitted on a first come/first served basis.

For more information and to obtain application materials, contact Mark Van Horn at 530.752.7645 or mxvanhorn@ucdavis.edu.

Add your event to our online calendar at www.sfc.ucdavis.edu/calendar

Small Farm Program



Celebrating 25 Years

Plan to Attend the UC Small Farm Program's 25th Anniversary Conferences

Specialty
Crops
Conference

May 26-27
San Diego County, CA

From the Ground Up—Innovating
and Cultivating a Wealth of
Agricultural and Food Alternatives

November 14-16
Davis, CA

Stay tuned for conference details!



Small Farm Center
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One Shields Avenue
Davis, CA 95616-8699

610W

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