Now is an excellent time to start thinking ahead and planning for spring dahlia planting. Fall signals the time when you’ll start to see dahlia bulbs available to preorder for arrival in spring, and there are many varieties to choose from. Because of their prolific nature and diversity, dahlias are an excellent crop to grow no matter the scale. Whether it be a plant or two in your backyard or a half-acre for commercial production, dahlias will always be worth the amount of space they take in your cropping system. Dahlias are relatively free of pests and diseases, have moderate fertility and water needs, and are fairly straightforward to grow. Basically, anyone who has an interest in growing flowers, or who can appreciate the simple, beautiful things in life, should be growing dahlias!

A Brief History
The dahlia is an herbaceous perennial plant grown primarily for its ornate flowers. For thousands of years, the indigenous people of Central Mexico cultivated and foraged for the Cocoxochitl, the dahlia’s original name. Little is known about this period of pre-colonial dahlia history as any recorded information was lost during Spanish colonization.

We do know that dahlias originated in the uplands of Central Mexico at elevations up to 10,000 feet. As with roughly 1/10 of all flowering plants, the dahlia belongs to the Asteraceae or daisy family. Other members of the Asteraceae family include artichokes, lettuce, sunflowers, and chrysanthemums.

Sometime in the 16th century, Spaniards took interest in the dahlia and shipped seeds from the flowers (which at the time had very simple daisy-like blooms) to Europe. European botanists and horticulturalists quickly discovered the dahlia could be bred into an ornate double form. They dubbed the plant Dahlia pinnata, for Swedish botanist Andrew Dahl and in reference to the arrangement of the leaves. Within a few decades, thousands of varieties of fully double blooming dahlias were available. Fast forward several hundred years and the dahlia is one of the most popular cut flowers grown by amateur gardeners and professional flower growers alike.

Many growers treat dahlias like a tender annual crop, when in fact their tuberous roots make them a perennial. If left to their own devices, dahlias go dormant in cold winter months and resprout from the same starchy tuber in the spring. Plant dahlia tubers after the threat of the last frost has passed and you can expect flowers from late summer until the first frost in your region. The sheer number of flowers on one dahlia plant is remarkable; along with the ever-popular zinnia, dahlias are one of the most productive cut flowers you can grow.

Since the early period of breeding in 19th century Europe, hobbyists and professional plant breeders have been hard at work creating thousands of new varieties of dahlias. Thanks to these breeding efforts, dahlias are now one of the most diverse species of flowers in terms of shape, color, and size.

Growing Culture/Seasonal Timeline
This seasonal timeline is intended to serve as a short how-to guide for growing dahlias at your farm or garden.

Propagation Methods
Although dahlias can be successfully grown from seed, they display incredible genetic diversity and therefore don’t breed true to type. A seed from a popular variety such as Café au Lait will likely look nothing like its parent flower. For this reason, dahlias are typically grown asexually by tuber divisions, which are available through a variety of sources (see Tuber Sources, below). You can also take cuttings from tubers forced in a greenhouse in the winter. The rest of this article assumes you will be growing dahlias from tubers, although growing culture is
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roughly the same no matter how you propagate your dahlias.

Climate

Because of their geographical origins, dahlias cannot handle frost. Always plant after the last expected frost date and consider covering the planting with row cover fabric to give the plants a boost and protect them from unexpected cool temperatures.

Soil Preparation and Planting Site

A well-worked soil with lots of drainage is important so as not to rot the succulent tubers. Soil temperatures should reach 60º F before planting. Dahlias need at least 8 hours of sun a day to grow and flower successfully, so it’s best to plant your tubers in an area with full sun. Amend your soil with 1–2 inches of a high-quality organic compost before planting.

Fertility

Dahlias are “heavy feeders” but will take up nutrients efficiently and do not require large amounts of supplemental fertility. If needed, a weekly application of liquid organic fertilizer can be used after the tubers sprout, especially if you are growing in a marginally fertile soil—but keep in mind that dahlias can become leggy if over fertilized with nitrogen. Incorporating a high phosphorus granular fertilizer at planting will increase flower production, as phosphorus generally encourages blooming, branching and root growth. Ask your local nursery to recommend a high phosphorus fertilizer and application rates.

Planting

Plant dahlia tubers horizontally, 4–6 inches deep. Planting tubers horizontally will ensure the eyes will be facing up and guarantee the most efficient growth. Allow 1-foot minimum between plants so they do not crowd each other. This is a good time to label your varieties with stakes and a permanent marking pen.

Irrigation

After planting tubers and during the first few weeks of their life cycle, be careful not to overwater. Dahlia tubers are prone to rotting in soil that is too moist. Once shoots appear it is safe to assume the dahlia plant has an established root system. At this point, you can water without any fear of rot. Dahlias require between 1–2 inches of water per week. In a climate with no summer rain, watering deeply 1–2 times a week should encourage good growth. You may need to water more or less often depending on your climate.

Overhead irrigation can be used until the tubers have sprouted, at which point, many growers transition to using drip tape or inline emitters. This will both save water and minimize risk of foliage diseases.

Pinching or Topping

Most growers recommend pinching or “topping” the center growth tip of each plant. When the first shoots reach between 10–12 inches long, simply cut them in half with sharp pruning shears just above a leaf node. This action encourages branching at the base and will grow a fuller, more productive plant.

Pests and Diseases

The few pests and diseases that affect dahlias can wreak havoc on the plants. Cucumber beetles (Diabrotica undecimpunctata) love to munch on the flowers and foliage. Use sticky traps (available in nurseries or online) to manage this beetle. If the pressure gets too intense, consider using an organically approved pesticide with Spinosad. Some growers cover unopened flower buds with jeweler bags to keep the beetles off, which works well on a small-scale.

Gophers also love to feast on dahlia tubers. If you grow on a small scale and have considerable gopher pressure, planting in gopher wire or baskets can prevent gophers from eating your costly investment.

Powdery mildew is common at the end of the season almost anywhere you grow dahlias, but if you live in a region with high humidity (including summer fog) or summer rains, you may find mildew on your dahlias earlier in the season. Although mildew won’t kill your plants, it can disrupt photosynthesis and decrease the market value of your flowers, if you sell them. A good preventive strategy is to use an organically approved spray such as Serenade, which includes a beneficial
Upcoming Virtual Events

UCSC A IRC presents: the Amah Mutsun Speaker Series
Saturday, November 7, 11:00am — 1:00pm
Online
The UCSC American Indian Resource Center presents their 12th annual Amah Mutsun Speaker Series—Critical Mission Studies Research: Telling the Truth. Presentation topics include facilitating change in K-12 classrooms by incorporating an indigenous perspective, revitalizing Amah Mutsun community narratives for an indigenous history of San Juan Bautista, and the indigenous history of Santa Cruz County. Visit bit.ly/AMSS20 to register.

Cover Cropping Demos & Talk
Tuesday, November 10, 5:00pm — 6:30pm
Online
Learn from Chadwick Garden Manager Orin Martin about growing cover crops to enhance soil health and fertility, reduce weed competition, and more. Cover crop planting demonstrations and photos will be part of this Zoom presentation, with Orin providing commentary and answering your questions about cover crops and prepping the garden for winter. Visit casfs.ucsc.edu/news-events/events/index.html for registration instructions.

Thumbing through Seed Catalogs with Orin Martin
Wednesday, December 9, 5:00pm — 6:30pm
Online
Fancy a fireside chat with Orin about which seed catalogs he likes to peruse and what he considers when ordering seeds? This Zoom presentation will more likely be from his kitchen table where the seed catalogs are piling up. Join him to start planning your spring garden. Visit casfs.ucsc.edu/news-events/events/index.html for registration instructions.

Getting Started with Fruit Trees
Wednesday, January 6, 5:00pm — 6:30pm
Online
Join Orin Martin for an online presentation on how to select, plant, grow, and manage healthy productive deciduous trees organically. Visit casfs.ucsc.edu/news-events/events/index.html for registration instructions.

Pruning Deciduous Fruit Trees
Wednesday, January 13, 5:00pm — 6:30pm
Online
Pome and Stone fruits will be featured in this online presentation on pruning and shaping fruit trees. Visit casfs.ucsc.edu/news-events/events/index.html for registration instructions.

41st Annual EcoFarm Conference
January 20-23, 2021
Online
CASFS alumni will be represented at the Ecological Farming Conference, happening virtually this year! EcoFarm Conference will feature inspiring keynotes, educational workshops, skill-building pre-conferences, extensive networking, and a virtual trade show where you can connect with exhibitors. Visit eco-farm.org/conference for more information and to register.

Friends Membership Renewals

Need to renew your Friends of the Farm & Garden membership? You can find renewal information and a secure donation link online at connect.ucsc.edu/joinfig. Contact us at casfs@ucsc.edu or 831.459-3240 with any questions. Thank you for your support!

Catch Orin on the Radio Dec 12
Saturday, December 19, 9:00am — 9:30am
Tune into KSQD 90.7 FM
Orin will talk about fruit trees with “In the Garden” host Joe Truskot.
Grants and Gifts Support Core Operations and Projects

We have many people to thank for the bountiful number of gifts and grants that have buoyed us up during these difficult past few months. September 30th was Giving Day at UCSC, and we raised a total of $8915 from 104 donors in one day! These funds will support student staff at the Farm & Garden, workers who are providing key labor on the ground at a time when we can’t have student interns, apprentices, or volunteers at the Farm & Garden due to Covid-19 restrictions.

A new $80,000 grant from Gaia Fund will support the work of our Organic Production Extension Specialist, Joji Muramoto, with funding for the position also provided by the UC Division of Agriculture and Natural Resources, CCOF, and the Thirty Petals Fund. Muramoto has been busy raising research grant funding for new projects, including his recent USDA award for researching biological alternatives to manage soilborne diseases in strawberries. This $411,395 grant from USDA National Institute of Food and Agriculture will allow Muramoto and a team of researchers including CASFS’s Jan Perez and Darryl Wong to study the ability of other crops, including onions and wheat, to suppress strawberry pathogens in the soil.

CASFS Director Stacy Philpott received a new multi-year USDA grant for her local research work entitled “EcoLogical Networks, Management Shifts, and Ecosystem Services in Urban Agricultural Landscapes,” totaling $500,000. This work will allow us to better understand plant-pollinator interactions and biological control in gardens in our region and how to best implement management changes that support biodiversity and food production.

CASFS Farm Site and Research Lands Manager Darryl Wong received a $50,000 grant from The Ida and Robert Gordon Foundation as year 4 of 5 years pledged for the No-Till Organic Agriculture Research Project at the CASFS Farm.

We continue to be extremely grateful for a multi-year gift from the Will & Helen Webster Foundation that brought $200,000 to CASFS this year, matched by another $200,000 by an anonymous foundation, and a $100,000 allocation from the Chancellor’s discretionary fund.

New grants providing general support to CASFS have included one for $12,000 from UNFI Foundation, $20,000 from Newman’s Own Foundation, and an anonymous foundation’s grant of $35,000.

Our many Friends of the UCSC Farm & Garden members have given generously this year through both membership pledges and special gifts, all so welcome and needed for the Farm & Garden and CASFS.

An easy way for Friends members to make a special gift is to add one with their membership renewal. For more information about donations, please go to casfs.ucsc.edu or contact Ann Lindsey at (831) 566-3779 or alindsey@ucsc.edu.

Farewells and Gratitude

We’re sad to say farewell to two wonderful CASFS staff members: Leigh Gaymon-Jones, Interim Apprenticeship Coordinator, and Sky DeMuro, Flower & Orchard Production Manager.

Leigh Gaymon-Jones first came to CASFS as an apprentice in 2016. She returned in 2019 as the Interim Coordinator of Residential and Community Life before being hired in that position permanently. Leigh was able to quickly switch gears when we began our year in review, and was instrumental in organizing our meetings with facilitators and refreshing the Apprenticeship Program. Leigh became CASFS’s Interim Apprenticeship Coordinator after Diane Nichols retired earlier this year.

We thank Leigh for her valuable contributions to CASFS and we can’t wait to see what great things she accomplishes next!

Sky DeMuro is a graduate of the Apprenticeship and joined the staff in 2014. Her background includes development and communications work with Farm Aid. Moving from the computer to the tractor, Sky immersed herself in learning the nuts and bolts of organic farming at farms including Pie Ranch and a diverse 7-acre farm near Santa Cruz with two other CASFS alumni.

Sky’s ability to think outside the box was instrumental during our strategic planning year. We appreciate her contributions to improving CASFS and will miss her greatly!
Center Spotlight: Scott Chang-Fleeman, apprentice alum

We recently caught up with Scott Chang-Fleeman, AEH class of 2017. Scott now runs Shao Shan Farm, a 5.5 acre organic farm he founded in West Marin, CA that specializes in certified organic Asian heritage vegetables.

What brought you to CASFS?
I was an undergraduate intern at CASFS as a UCSC Environmental Studies student. I took a lot of classes at the Farm & Garden and worked with CASFS instructors. I had been around the apprentices a lot as an undergrad and thought it was really cool and knew it was something I wanted to do. I graduated from UCSC in 2015 and took a job at Pomona College managing their educational farm, thanks to a letter of recommendation from Darryl (Darryl Wong, CASFS instructor). I moved back to Santa Cruz to do the Apprenticeship to learn more about how to manage a farm properly.

Do you have a favorite memory of your time at CASFS?
We had a really good cohort in 2017. I got really close with all of them. The experience of getting to work with all the site managers and being able to live in the place where we’re learning and working, that is so rare for any kind of career path to have that immersive experience.

A highlight that changed my whole thinking around farming was Kellee’s (Kellee Matsushita-Tseng, CASFS instructor) seed sovereignty salons. Those totally reframed a lot of how I think about farming and the whole food system, starting from the basic level of seeds. I also loved my winter as a second year apprentice. The winter between first and second year is always a pretty special time for people, but just experiencing the farm for the whole season is really nice.

We were around for the 50th anniversary which was really fun. I feel really fortunate for that because so many apprentices came back and I got to meet them all. One of the coolest things about CASFS is how long it’s been around and you can find CASFS people everywhere and it was cool to actually meet those people. Orin would say at that time, “So much of farming and gardening is doing things for people that you’ll never meet, building things for people that you’ll never meet. But this year they’re going to meet you.” So much of the work we do pays off over generations and years and years.

What are you doing now?
I run Shao Shan Farm, a 5.5 acre organic farm in West Marin, CA that specializes in certified organic Asian heritage vegetables. We grow predominantly certified organic Asian vegetables, but we dabble in a little bit of everything. This season, because of covid, we switched to a CSA model, like a lot of farms. We have a 70 member CSA of which are around 90% Asian American folks within three counties. We specialize in cool season crops: leafy greens and root vegetables, and dry-farmed crops: tomatoes and kabocha squash. We just found out we got into the Clement Street Market in San Francisco, which is my favorite market in the City to shop at. We also sell to a chef who runs two San Francisco restaurants: Mister Jiu’s and Mamahuhu. I actually was connected to this chef thanks to Darryl, who had a relationship with him when he ran a farm.

How did your experience at CASFS prepare you for what you’re doing now?
I would not be farming without CASFS in so many senses. First and foremost, CASFS was my first exposure to agriculture. As an 18 year old freshman from West LA, I’d never stepped foot on a farm before CASFS. I didn’t even know it was something I was interested in until I started interning there. And as far as the Apprenticeship Program, it was an opportunity to learn a little bit of everything as a first year, but my second year felt like the deep Apprenticeship experience that I was really looking for. Now I have one employee and will soon be hiring my second and having had the experience as a second year and managing first years, I feel really confident in my ability to be managing employees already, even as someone who has never had employees before. My farm is pretty much a miniature version of CASFS.

Find out more about Scott at casfs.ucsc.edu/about/profiles/scott-chang-fleeman.html. Stay tuned for a virtual workshop on growing Asian vegetables with Scott in March 2021!
Growing Dahlias (from page 2)
bacteria that reproduces so prolifically it crowds out other disease-causing pathogens. Another approach is to remove 12-24” of the lower leaves from the plants, which will allow more airflow and can reduce the presence of mildew.

Slugs and snails can eat your dahlias to the ground when they first sprout, but aren’t much of a problem once the plants are bigger and more established. If you have large slug or snail populations, put a small amount of organically approved Sluggo around the base of each tuber.

Staking
Dahlias can grow anywhere from 2 to 8 feet tall. Depending on your situation you may consider staking and stringing your plants to prevent lodging (falling over). Simply pound 2-inch wooden stakes or metal T-posts every 8 feet, and weave a synthetic string through the posts to provide extra support for your plants.

Disbudding
Some growers choose to “disbud” their dahlias on a regular basis. Disbudding your dahlias will provide you with fewer but larger flowers. Although this process can take a long time, the effort is arguably worthwhile.

To disbudd your dahlias first find an unopened flower bud at the apical end of a branch. Once you find this bud, which will soon become your flower, work your way down the plant removing all other buds by pinching or rubbing them off with your fingers.

Harvesting Dahlias
It’s best to harvest your dahlias early in the morning or late in the evening, and roughly twice a week. Regular cutting will encourage your plants to give you more flowers. Try dipping the ends of your stems in a hot water plunge for 20 seconds and then immediately place them into a bucket of cool water and refrigeration if you have it. This can lengthen the vase life of your dahlias, which are notoriously short-lived.

Digging Tubers
Dahlia tubers can be left in the ground for several years before being divided, however, most growers dig them in the fall to protect their investment. Between go-

Fun Fact: Spanish horticulturalist Antonio José Cavanilles named the dahlia after Swedish scientist Anders Dahl, but the Aztecs who first cultivated the plant named it COCOXOCHITL which loosely translates to water cane, presumably named after the hollow stems for which the plant is well known.

phers, rain, and frost, winter months could destroy your overwintering tubers.

If you live in a climate with frost, it is recommended that you wait until the second frost before digging your dahlias (a hard frost thickens dahlia tubers and helps them store longer).

If you live in a frost-free climate, growers recommend stubble cutting your dahlias to a height of approximately 4–6 inches and then waiting a week or two before digging sometime in early to mid-November. Cutting the plants down is thought to simulate a hard frost and helps to thicken and strengthen the skin of the tubers for good winter storage (see below).

Dividing Tubers
Tuber divisions can be made in the fall after lifting them or, more commonly, in the spring just prior to planting. Divisions made in the fall are easier to cut because of their high moisture content, but eyes can be easier to see in the spring once tubers have begun to sprout.

When dividing your tubers, it is important to take a piece of the stem with each tuber division—this is where the eyes are, and the eyes are where next season’s growth will sprout from. A piece of tuber without an eye can never grow another dahlia plant.

Storage
Every dahlia grower seems to have a different idea of how best to store dahlias tubers. Most recommend placing your dahlia clumps or individual tubers in crates, bins, or boxes filled with an inert bedding material. Coco peat, peat moss, sawdust, or wood chips all make a good substrate for tuber storage. Very lightly moisten this material (similar to a wrung-out sponge) and then pack tubers into
Apprenticeship Updates

Nancy Vail (1997) and Jered Lawson (1994) run Pie Ranch in Pescadero, CA. Pie Ranch was impacted by the CZU Lightning Complex fire in August, and one of their historic ranch buildings was completely destroyed. The following text is taken from their website:

Since the fire struck, the past four weeks have been tumultuous here at Pie Ranch. Our emotions run the gamut from grief over our losses, mourning for our staff who have lost homes, exhaustion from literally fighting fires, evacuating our own homes and working long hours to joy and lightness as we read your messages of support, hope and memories of the old house and special times at Pie Ranch.

We can’t help but get stuck on joy; your words of support mean the world to us. Hundreds of comments came and keep coming in describing what Pie Ranch has meant to you as students who have added to our collective wisdom, corporate groups who have held retreats here, folks who got married at Pie, former staff and apprentices who have shared the house over the course of our 15 years at the farm…

You keep us motivated to do even more.

One of the highlights over these past weeks was the first-ever Año Nuevo neighborhood wildfire recovery meeting with farmer neighbors, folk from the Amah Mutsun Tribal Band and Land Trust, San Mateo Resource Conservation District, Natural Resources Conservation Service, UCSC ecology and evolutionary biology dept, and State Parks. We circled up to meet each other, honor the land and history, and walk together through charred hillsides and the ash-filled watershed. We learned about the resources available to farmers and discussed putting together a recovery plan for the region that would include removal of eucalyptus, seeding of native grasses, erosion control techniques, prescribed burns, and other methods to support restoration and resiliency of the whole area while centering the Amah Mutsun tribe’s skill and knowledge with the commitment to bring back indigenous practices of land stewardship. It felt like a historic meeting. May we continue to deepen and learn as we move forward together.

You can help Pie Ranch rebuild! Visit pieranch.org/take-action to donate. Many other homes and farms were affected by the CZU fire and other wildfires this year in California and beyond. If you would like to donate to local wildfire relief funds, here are some general fundraisers we recommend:

- The California Family Farmer Emergency Fund, caff.org/2020firefund/
- Community Foundation Santa Cruz County Fire Response Fund, cfcc.org/updates/fire-response-fund
- Amah Mutsun Land Trust, donorbox.org/amah-mutsun-land-trust
- United Way Fire Relief Fund, uwba.org/wildfirerelief/

2020 Harvest Festival Event Recordings including our first CASFS Quarterly Lecture

The 2020 Fall Harvest Festival featured a week-long series of virtual events for all ages. If you missed any sessions, don’t fret! You can find recordings to most of our 2020 Harvest Festival offerings on our YouTube channel: youtube.com/user/casfsvideo. Select the 2020 Harvest Festival playlist to view the sessions.

Recorded sessions include:

- The Evolution of Agroecology as a Practice, a Research Discipline, and a Social Movement, the first presentation of our CASFS Quarterly Lecture Series.
- Saving Seeds, Sustaining Our Communities with Kellee Matsushita-Tseng, UCSC Farm Garden Assistant Manager, and Adria Vidales of the Demeter Seed Library.
- The COVID-19 Farmworker Study – Findings from California, a presentation on unique insights into the experience of these essential workers.
- Celebrating Queers in Nature with Edgar Xochitl of Hummingbird Farm in San Francisco and Clare Riesman, Assistant Manager of the Chadwick Garden.
- The Everything Apple Panel featuring Orin Martin, Manager of the Chadwick Garden, Sky DeMuro from the CASFS Farm, Nicole Todd of Santa Cruz Cider, and Tim Bates of the Philo Apple Farm, plus a recipe for making cider donuts!
- What is the Food Systems Working Group and What Does it Do? A panel of students discuss FSWG and how they work to improve the campus food system.
Growing Dahlias (from page 6)

your desired vessel. Note: never store in closed plastic bins; always make sure there are vents for air to move in and out of your storage vessel.

Check your bins once a month in the winter to remove any rotting or damaged tubers and to adjust the moisture of your bedding material as needed. The goal here is to keep the tubers dry enough so they won’t rot but not so dry that they shrivel up and are no longer viable to plant in the spring. Tubers should be kept in a cool dark place with temperatures ranging from 40-50º F.

Popular Varieties

  Café Au Lait – Perhaps the most sought-after dahlia variety today is very popular in wedding floral design.
  Gerrie Hoek – Rumored to be Alan Chadwick’s favorite, this pink waterlily with 5-inch blooms has been gracing gardens since 1942 and never disappoints.
  KA’s Cloud – This dinnerplate-sized dahlia bred by breeder Kirsten Albrecht of Santa Cruz Dahlias is like a giant cloud kissed with pink blush. Plus it’s local and local is better, right?
  Crichton Honey – This plant produces honey-yellow 2 ½-inch ball type flowers. A good candidate for small backyard gardens as the dwarfing plants won’t take up too much space.
  Bishop of York – For something different, and to get an idea of what the original open centered dahlia may have looked like, try this simple yellow variety, which has beautiful dark red foliage.

Tuber Sources

Dahlia tubers are costly upfront, but a single tuber planted in the spring can multiply into as many as 15 plants when divided in the fall or following spring. For small orders, Swan Island is our favorite source. They offer hundreds of varieties of dahlias at a reasonable price and are always of the highest quality. Availability for the following spring is usually posted in the late summer/fall so make sure to order early to get the varieties you want.

For large quantities, look for a reputable wholesaler such as Eden Bros or Gloeckner, where bulk prices are much more affordable. Additionally, tubers can be found at local Dahlia Society Plant Sales in the spring and at local plant nurseries. My favorite source for dahlias is local growers, who are eager to share new and exciting varieties and chat about dahlias endlessly.

Resources

Local Dahlia Societies can help with all your dahlia growing concerns. The Monterey Bay Dahlia Society meets the 2nd Friday of every month at the Simpkins Swim Center Community Room in Santa Cruz. http://www.mbdahlias.org/

American Dahlia Society - https://dahlia.org/

Dahlia Addict can help you locate an online vendor who sells a variety you are looking to grow. They have at least 2,900 listed varieties. http://dahliaaddict.com/

About the Author

Evan Domsic is the farm manager at Singlethread Farms in Healdsburg, CA. He is an alumnus of the CASFS Apprenticeship in Ecological Horticulture and former Alan Chadwick Garden assistant manager.

Illustrations by Laura Vollset. Edited by Martha Brown.