



*They dined on mince, and slices of quince,
Which they ate with a runcible spoon;
And hand in hand, on the edge of the sand,
They danced by the light of the moon.*

—Edward Lear

QUINCE

By Stacy Ryerson
UCCE Master Gardener &
Master Food Preserver of Amador County

Quince is that lovely, very early spring bloomer found in gardens throughout the foothills at all elevations. However, did you know that there are two genera of quince? *Chaenomeles*—the shrubby ornamental flowering quince—is the one you typically see in gardens, and *Cydonia* is a less commonly-seen small tree that bears quince fruits favored for culinary use. Both are members of the Rosaceae family, which also contains apples and pears, among other fruits.¹

The *Chaenomeles* flowering quince sets edible fruit just like its culinary cousin the *Cydonia*, and just like *Cydonia*, the fruits are hard, astringent, and very unpleasant to eat raw. *Chaenomeles* quince, native to Japan, China, Bhutan, and Burma (Myanmar), is a genus with three main species of deciduous spiny shrubs, usually 3-10 feet tall. They are hardy in USDA zones 5a to 9b in full sun to partial shade. They all have graceful, somewhat arching branches, delicately spotted with blossoms. The flower colors vary in the many species within this genus:

- C. speciosa*, Chinese Flowering Quince—red, white, or flecked red and white;
- C. japonica*, Japanese Flowering Quince, native to Japan—usually red, rarely can be white or pink; and
- C. cathayensis*, native to China—white or pink.

There are many other named hybrids and cultivars to be found in nurseries or online.

Cydonia oblonga, the culinary quince, is the sole member of the genus, *Cydonia*. It is native to rocky slopes and woodland margins in Southwest Asia, Turkey, and Iran, although it can be grown successfully at latitudes as far north as Scotland and Eastern Europe. *Cydonia* quince grows on a small, irregularly-shaped tree to about 15 feet. In spring, the white or pink showy flowers resemble

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MARCH 2016

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(209) 223-6838
Office hours: 10 am–Noon
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mgamador@ucanr.edu

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► Quince (continued from page 1)

large apple blossoms and the leaves also appear quite similar to apple leaves, causing it to often be mistaken for an apple tree in old gardens. The trees are hardy in USDA Zones 5 to 9. *Cydonia* quinces prefer a fertile site in full sun. They are slightly more tolerant of wet soils and drought than apples, but will fruit more reliably on moist but well-drained soil. *Cydonia* quince are not without their problems: fire blight, borers, codling moth, curculio, scale and tent caterpillars can all cause problems.²

Pruning shapes the young *Cydonia* tree for the future, and this needs to be started at the earliest stage of its growth. Ideally the trunk should be kept stout at around 3-4 feet, allowing four to five main branches to grow, keeping them to about 2 feet. The lower branches will give a strong framework to the tree and will be the basis for the shape of the future tree. With this framework established, the fruit is easily accessible for harvesting. Once the center of a young tree has been cleared, the branches are pruned to an outward facing bud, with the intention to encourage next year's new growth to grow upward and outward to maintain a vase shape to the tree. It should not be allowed to extend too far because of the eventual weight of the fruit. This has to be done every year and there is a degree of chance involved in the direction that the new shoots are going to take in the next season. If they do not grow as planned, they can be easily corrected the following year. Thin out suckers in winter or early spring.

Quinces turn from green to yellow when they are ripe, with their harvest season typically from September to early November. Fruit dropping from the tree is the sign that it is ready to be picked. The fruit loses pectin as it ripens, so if your plan is to make jelly don't use overripe fruits. Although the flesh is hard it bruises easily, so care should be taken when picking quince. The fruit can be stored for around three months in the refrigerator.

Did I mention that quince are hard, astringent, and very unpleasant to eat raw? However, magic occurs when long slow heat is applied allowing them to become luscious and fragrant. Quince are quite suitable for marmalade and preserves,³ as they contain more pectin than apples, although the true *Cydonia* quinces have somewhat less pectin than their flowering *Chaenomeles* cousins. The whole quince fruit can be peeled, cut into large pieces, and slowly simmered in water for several hours, sometimes overnight, until it becomes soft and changes color to a ruby red. The slower and longer it cooks, the stronger the color. Once soft, the fruit can be strained through muslin for quince jelly and the remaining pulp can be made into quince paste aka membrillo.

Membrillo is a favorite Spanish snack when paired with ham, bread, and Manchego, a sheep's milk cheese. The tart/sweet flavor of membrillo is especially complementary with cheeses, especially when a slab is added to a mixed cheese platter. If you want a real treat, you can make your own membrillo, aka quince paste.⁴ The Portuguese word for quince is marmello and this is how the word marmalade came to the English and French languages. When added in small quantities to pies and jams, quince's strong perfume enhances the flavors of the other fruits. A very old recipe for Paradise Jelly combines apples/crabapples, quince, and cranberries. Finely diced, quince will enhance the flavor of apple sauce and it adds nutrition because quince contains more vitamin C than lemons (up to 150 mg/100 g). ♡

1. <http://www.ipm.ucdavis.edu/PMG/GARDEN/PLANTS/quince.html>

2. <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7414.html>

3. http://nchfp.uga.edu/how/can_07/quince_jelly.html

4. http://www.simplyrecipes.com/recipes/membrillo_quince_paste/



Sherwood Demonstration Garden Reopens to the Public

Preparations are underway to ready the garden for reopening to the public on **Friday, April 1**. All of the themed gardens are finished having appropriate plants cut back in readiness for new spring growth, the daffodils are in full bloom, and the poppies are ready to pop. Several public education classes have already been presented in the garden with several more planned for the next several months.

In addition to the April 1 reopening, our annual Spring Plant Sale will be held for the first time at the garden on **Saturday, April 23**, from 8:00 am to 3:00 pm. Heirloom and hybrid tomatoes, vegetables, and herbs will be in good supply in addition to fruits, perennials, natives, ornamental grasses, shrubs and trees, and succulents. See page 6 for more information. We hope to see you there.

— Sue McDavid
UCCE Master Gardener of El Dorado County



Bog Garden Observations

While the Bog Garden is under construction in the Sherwood Demonstration Garden, so are the local toads. The photo above shows a toad with eggs. It's truly amazing to see! The long, worm-like substance under the toad is the membrane housing the eggs. In the photo, it is likely it is the male that is hovering over the eggs to fertilize them. This is definitely a toad due to its physical characteristics. Toads prefer land and frogs prefer water, yet both toads and frogs return to the bog to reproduce. While toads lay eggs in long strips, frogs lay in clumps.

In early February, demo garden volunteers had to deal with some emergency drainage issues with the Bog Garden as the bog was overflowing and the diversion pipe was broken. No eggs were noticed at that time. It is possible the toads just started laying eggs around mid-February, when this photo was taken, as the water in the bog was at a normal level. It takes approximately 10-15 days for the tadpoles to emerge once fertilized.

— Kelly Auville
UCCE Master Gardener of El Dorado County

Sherwood Demonstration Garden Information

El Dorado Center - Folsom Lake College
6699 Campus Drive, Placerville, CA 95667

Hours of Operation beginning April 1
April 1, 2016 - October 31, 2016
Wednesday, Friday, and Saturday from 10am to 2pm

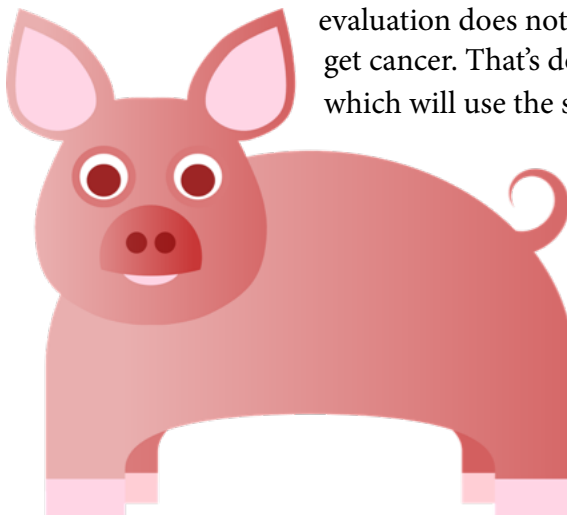
Folsom Lake College charges \$2 parking fee on weekdays, however Saturday parking is free

»»» No dogs allowed «««

 [Sherwood Demonstration Garden Website](#)

Is Glyphosate a Carcinogen? And Bacon too!

By Scott Oneto, Farm Advisor,
University of California
Cooperative Extension



evaluation does not tell you how likely you are to get cancer. That's done by a risk assessment, which will use the same words—"is," "probable," and "possible"—but in a very different way. Risk is a measure of toxicity and exposure. A certain product may be very carcinogenic, but if you are not exposed to it or if you are exposed to at very low levels, your risk of getting cancer will be low.

Last year, the International Agency for Research on Cancer (IARC) made a determination that glyphosate—the active ingredient in Roundup® and other similar herbicide products—"is probably a human carcinogen." IARC placed the herbicide in its 2A—probable human carcinogen—group along with other compounds such as grapefruit juice, apples, UV light, red meat, and some occupations including hair dressers and those jobs that include working a night shift. IARC's determination of listing glyphosate as a probable carcinogen was based on "limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals."

A certain product may be very carcinogenic, but if you are not exposed to it or if you are exposed to at very low levels, your risk of getting cancer will be low.

How does IARC make a determination? IARC has a team of scientists from around the world that searches through existing literature to evaluate scientific research that has been conducted on a specific chemical, product, occupation, etc. It is important to point out that IARC's conclusions are based on assessing the hazard. A hazard assessment simply states that a certain chemical, environmental element, or behavior is somehow related to cancer. IARC will then make a determination whether something "is," "is probable," "is possible," or "isn't," carcinogenic. This type of hazard

Take bacon and other processed meats. IARC recently classified these as category 1, "carcinogenic to humans." Does this mean we should all stop eating hot dogs, salami and bacon? Perhaps, if this is all you ate. But when consumed in moderation, your exposure is low, conversely your risk is low.

In response to the IARC decision on glyphosate, California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) published a notice announcing its intent to list the herbicide as a carcinogen under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65). Prior to doing this, OEHHA announced a public comment period. The comment period for this decision closed this past October. OEHHA's decision is forthcoming.

Reaction to the IARC determination and the potential Prop 65 listing was significant. People on both sides of the fence—pesticide advocates and pesticide opponents—were asking the question, Should we stop using glyphosate? In order to answer this question, it's valuable to consider the following.

First, IARC's determination of "limited evidence" of human carcinogenicity was based on information provided by epidemiological studies. These studies used questionnaires given to farmers and their families in North America and Europe to look for a link between chemical exposure and cancer. Epidemiological studies can reveal if there's a positive association (or correlation) between exposure to the agent and cancer, but they can't be used to determine the

cause of the cancers. They also can't completely rule out other explanations such as chance or bias. Additionally, these studies have limitations such as the accuracy of self-reported information and the effect that exposure to other substances—including other pesticides—might have on cancer incidence. In short, these types of studies can identify a correlation, but they don't establish a direct link or causality.

IARC's determination was also based on "sufficient evidence" of carcinogenicity in lab animals, but not all of the studies in the assessment revealed a carcinogenic link. Only four of the seven chronic feeding studies used in the IARC assessment found a relationship between glyphosate and cancer. One of those studies—a 24-month feeding study where kidney tumors in mice were determined to be glyphosate-related—was re-evaluated by the USEPA in 1991. When the USEPA first reviewed this study in 1985, they were in agreement that the observed renal kidney tumors were caused by glyphosate exposure. However, the later re-evaluation cast doubt on the statistical significance of the researcher's initial conclusion. Eventually, it was the judgment of the reviewing pathologists that the kidney tumors were not treatment-related. The IARC pathologists, however, did not agree with the USEPA's conclusion and included this study in their 2015 assessment.

Toxicological risks must be assessed by looking at both toxicity—or in this case, carcinogenicity—and exposure. The assessment cannot be made solely by asking the question, Is the substance a carcinogen? While several of the animal feeding studies in the IARC assessment demonstrated a positive relationship between glyphosate exposure and cancer, the concentrations in those tests were higher than what an herbicide applicator would experience in the field. Even if one ignores the fact that oral exposures are highly improbable for applicators, the dosages themselves are atypical for actual herbicide use scenarios. Depending on the study that's examined, the tumor-causing dosages were from 30 to 30,000 parts per million. Using these dosages, a man weighing 175 pounds would have

to drink more than a quarter tablespoon to slightly more than 1 gallon of herbicide every day for 2 years to have an exposure that's equivalent to that of the lab animals'.

As more research is done, it's a certainty that many more substances—some of which we are commonly exposed to in everyday life—will be identified as carcinogens. The recent inclusion of bacon and other processed meats on IARC's Group I list for known human carcinogens is evidence of this. When considering these types of determinations, it's critical to remember that the amount and duration of exposure must also be considered, not just the fact that the chemical made it "on the list." Perhaps the best advice regarding this fact can be found on the website of the [American Cancer Society](https://www.cancer.org/).

Even if a substance or exposure is known or suspected to cause cancer, this does not necessarily mean that it can or should be avoided at all costs.

Even if a substance or exposure is known or suspected to cause cancer, this does not necessarily mean that it can or should be avoided at all costs. For example, estrogen is a known carcinogen that occurs naturally in the body. Exposure to ultraviolet (UV) radiation from sunlight is also known to cause cancer, but it's not practical (or advisable) to completely avoid the sun. (American Cancer Society website, 2015).

As to the question, Should we stop using glyphosate? The answer—yet again—leads us back to exposure. If exposure is low, risk will also be low. I am a strong advocate for non-chemical weed control strategies, but I also like to have access to a wide assortment of tools in the toolbox and believe that herbicides do have a place in agriculture.

Scott Oneto, is the Farm Advisor and County Director for the University of California Cooperative Extension Central Sierra. He can be reached at sroneto@ucanr.edu or 209-223-6834. 🌱

Spring Plant Sales

El Dorado County

It's time to think about what you want to plant this spring and the UCCE Master Gardeners of El Dorado County want to help you make your selection. Be sure to mark your calendar for **Saturday, April 23**. The spring sale will be held for the first time at the Sherwood Demonstration Garden (SDG). Prior sales since 2010 were held in the parking lot at the Veterans Memorial Building. Many thanks to the Vets for being such good partners over the years. This spring, with the opening of the SDG in October of 2015, we will take advantage of the garden in all its spring glory to offer our 12th plant sale.

The Master Gardeners have been busy propagating the plants to offer you at the plant sale. Many of the plants can be viewed in a garden setting in one of the 16 themed gardens that comprise the SDG. We still have planting to do in the SDG so some of the plants in the sale could end up in one of the themed gardens in the future. But that will only happen if you, our loyal customers, don't take all the plants home with you to put in your gardens.

Because the main purpose of UCCE Master Gardeners is to educate the gardening public, we will have many Master Gardener volunteers available during the sale to answer your gardening questions. Take advantage of the venue and take a walk around the entire SDG before making your plant purchases. We will have individual garden volunteers available to answer questions about specific gardens and help you select the right plants for your garden needs. Given the size and changing elevations in El Dorado County, not all plants offered will fit in your location. That is just one example of the way we can help you with your choices, as we have each plant marked with zone, light, and water requirements. We also indicate those plants that are deer resistant.

The Sherwood Demonstration Garden opens to the public on **Friday, April 1**. See page 3 for more information. On the Plant Sale day the garden will be open from 8:00 am until 3:00 pm.

— *Merry Campbell,*

UCCE Master Gardener of El Dorado County



Amador County

What says spring better than a plant sale? The UCCE Master Gardeners of Amador County invite you to our annual Spring Plant Sale, **Sunday, April 24**, from 10:00 am to 2:00 pm. “Amador 360”, 18590 Highway 49, Plymouth, CA, will host our sale again this year.

There will be the usual plants that you'd expect at a plant sale, lots of vegetables of all kinds, herbs, and perennials, with an emphasis on drought tolerance. Why should you want to make a special trip to buy our plants? Because these are plants that your local Master Gardeners know and love and we want you to get to know and love them too. Some of these plants will be odd-balls that you wouldn't find at a big box store or even at your local nursery.

Stacy, one of the Master Gardeners, is bringing two of her favorite plants that you might not find anywhere else. One is a Bur Oak (*Quercus macrocarpa*), which has large acorns, but more important is that it is both drought and fire resistant. She is also bringing Tree Kale that she believes was

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Amador County

Questions? Call (209) 223-6838.

Mar 19 Celebrating Flowers

Who can resist a flower? There is no question of their beauty. This class will cover annuals, perennials, bulbs, shrubs and trees. The plants discussed will be selected based on their willingness to grow in the foothills and their water efficiency. Location: Amador County GSA Building, 12200-B Airport Road in Jackson.

Mar 26 Building Hoop Houses

Would you like to have more control over the length of your growing season? Do you want to harvest tomatoes year round and grow the lettuce for your salads in the hot summer? If so, then a hoop House could be the perfect addition to your gardening area. Sean Krietich, well-known local organic gardener and honey producer, has both knowledge and experience building and growing vegetables in these structures. This workshop will cover the construction and utilization of a low cost hoop-house. Attendees will gain hands on experience in the complete construction of a hoop-house as well as ideas for using the structure to prevent frost in the winter and keep the plants cooler in the summer. Location: Lavender farm of Ron Antone, UCCE Master Gardener of Amador County, in Mt. Aukum. **Pre-registration is required.** Call 209-223-6838 or e-mail mgamador@ucanr.edu for directions and to sign up for the class.

Apr 9 Tackling Common Pest Problems

Homeowners and gardeners alike suffer incredible disruptions from damage caused by many common pests. Do you have ants, ground squirrels, gray squirrels, gophers, mice, aphids and or deer as unwelcome guests? The list could go on and on. This class will provide information on IPM, Integrated Pest Management, to help you decide on a plan of action. Location: Amador County GSA Building, 12200-B Airport Road in Jackson.

Apr 24 Master Gardener Annual Plant Sale

Join UCCE Master Gardeners of Amador County at our annual plant sale. Location: Amador 360, 18590 California 49 in Plymouth. (10:00 AM - 3:00 PM)

El Dorado County

Questions? Call (530) 621- 5512.

Mar 19 Combo Class – Tomatoes: from Seed to Table

This is a Master Gardener and Master Food Preserver Combo Class. Tomatoes are a favorite in the spring and summer garden, and are the reason many people get started gardening in the first place. In this class, Master Gardener Zack Dowell will show you how to choose the right varieties, deal with insects and diseases, properly water, care for, and harvest your tomatoes. In the second half of the class, Master Gardeners and Master Food Preservers Cindy Young and Judi Johnson, will talk about what you can do with your tomato harvest: canning, dehydrating and freezing. Location: Government Center Hearing Room, Building C, 2850 Fairlane Court in Placerville.

Apr 2 Making Worms Work for You

Join Master Gardeners Merry Campbell, Gail Fulbeck, and Cindy Young for this presentation on how to use these hardworking friends of all gardeners, the worms. Learn how worms can rapidly break down kitchen waste to make worm compost, one of the best organic fertilizers possible. Covered also will be the types of worms needed, how to harvest the compost and how to set up a worm bin. Location: Veterans Memorial Building, 130 Placerville Drive in Placerville.

Apr 9 Combo Class - Salsa Gardening

This is a Master Gardener and Master Food Preserver Combo Class. Salsa Gardening gives participants an overview of gardening involving growing ingredients for basic fresh as well as demonstrating the actual procedure of making fresh salsas. Recipes will be given to demonstrate creativity in making and using salsa. History of salsa will also be discussed. Participants will be shown how simple it is to grow and provide ingredients used in various types of fresh salsas. Location: El Dorado Hills Library, 7455 Silva Valley Pkwy. in El Dorado Hills.

Apr 9 Saturdays with Barry (10:00 AM - Noon)

Join Barry at the Sherwood Demonstration Garden's Vegetable Garden the second Saturday of each month for demonstrations on gardening through the seasons. Get your questions answered. Weather permitting. Location: Sherwood Demonstration Garden, 6699 Campus Drive in Placerville (behind Folsom Lake College, El Dorado Center).

► *Spring Plant Sales (continued from page 6)*

brought here by Italians or Portuguese during the gold rush. Some call it a kale, but the leaves are a little more close to a collard green. You can cook it like collards, or you can be like Stacy and feed it to your chickens.

The pride of most vegetable gardens is tomatoes. We will have more than forty varieties with six of those being paste tomatoes. So for those of you that like to make sauce and to do some canning, we hope to have some new varieties for you to try. My favorite tomatoes the past couple of years have been the Artisan tomatoes. If you haven't tried them, you are in for a treat.

I like to get double duty from my perennial plants, so there will be a selection of plants that are not only beautiful in the garden but also make beautiful natural fabric dyes. This would be a fun project to share with your kids or grandkids.

We want you to know that we all love and support our local nurseries, and we want you to support them too, but on this one day, please come and support your local UCCE Master Gardeners. This is our major fundraiser, so please help us to be able to continue to give you free classes and advice. Even if you are not in the market for plants, come by and chat with us. There is nothing Master Gardeners like more than talking about plants.

— Janice Johnson, UCCE Master Gardener of Amador County & California Naturalist



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University of California
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Food
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Classes at El Dorado County Fairgrounds
from 10 am to Noon, unless otherwise noted.

Mar 19 Make Your Own Sauerkraut

(10:00 AM - 12:30 PM)

Eisley Nursery, 380 Nevada Street in Auburn

Apr 9 Of Course You Can! Boiling Water & Atmospheric Steam Canning Workshop

(8:30 AM - 4:00 PM) \$60 - Registration Required

Apr 23 Jr.s' Jams & Jellies (10:00 AM - 3:00 PM)

Apr 27 All Dried Up! Dehydrating & Freezing

Cameron Park Community Center

2502 Country Club Drive in Cameron Park

Amador/Calaveras County

Phone: (209) 223-6857 • Email: acmfpp@ucdavis.edu
Classes are from 10-Noon.

Apr 9 Survival & Camping Foods

May 14 Jams, Jellies & More

Jun 8 Boiling Water & Steam Canning Basics

Jun 11 Sausages (10:00 AM - 1:00 PM)



UCCE Master Food Preserver Classes



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