Central Coast Chapter CRFG

July 2022 Newsletter

by Jenny Weaver & Tom Sheldon
send articles & photos to crfgccnewsletter@gmail.com

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Next CRFG Meeting

BBQ (manned by Tucker Schmidt) and Potluck

Potluck & BBQ at Tucker and Keri's

When:
Saturday August 13, 2022 1:00 p.m.

Where:
Tucker & Keri's garden
795 Story Street, Nipomo

Parking:
Park along Story Street. **Do not park on Tucker's gravel easement road!** There is room for about 5 cars at Tucker's house, but please reserve these spaces for members with disabilities or our oldest members.

Food:
Chicken and Tri-tip provided by our Central Coast Chapter and bar-b-qued by Tucker using his family's mobile BBQ.

What to Bring:
Members and their guests please bring a side dish with serving utensils and your own table setting (plates & silverware, napkins…).

Bring your own beverage or water, preferably in your own container.

Bring your own chair and hat. We are arranging to get some shade canopies and umbrellas.

Announcements

August 20, 2022 SLO Master Gardeners
Avocado Care and Pest Updates for Citrus and Fig Trees

Details: Growing avocados and current status of Asian Citrus Psyllid in SLO County.

Special guest speaker, Valeh Ebrahimi, postdoctoral researcher at UC Riverside, will discuss Black Fig Fly, an important new pest of fig trees.

Register http://ucanr.edu/avocitrusfigs

Time: 10:00 am - 12:00 pm

Location: Garden of the Seven Sisters, 2156 Sierra Way in SLO

Events are free and open to all! Registration is encouraged.

See Master Gardener's Calendar for details and other scheduled workshops. They occur on the third Saturday of the month. https://ucanr.edu/sites/mgslo/

September 10th from 10:00 AM until 2:00 PM Free Compost!

Please note this is the same day as our September 10th chapter meeting (details to come)! Go early to Kompogas (there will be a waiting line) so you can make it to CRFG September meeting in Paso Robles at 1:00p.m!!

The notice from the Kompogas website is on the next page

FALL 2022 COMPOST GIVE AWAY at KOMPOGAS-SLO.

UPDATE!!!!! Back by popular demand – We have set a date for Fall 2022 Compost Giveaway. Our next COMPOST GIVEAWAY for FALL of 2022 will be held on Saturday, September 10th from 10:00 AM until 2:00 PM.

Just like at the last event, we will have two separate lines. One for pick up trucks and trailers that can be loaded with our front end loader and the second one for self-serve clients that want to have smaller quantities in buckets or bags. We will have self load/self shovel bins. Bring your own shovel if you can, so we can expedite things. Just follow the instructions of one of our volunteers in yellow vests.

If you are coming with a pick up of trailer, please make sure to bring tarps to cover your load before leaving our premises so we can ensure not to leave a trail of compost on public roads.

One additional request. Since we want to be a good neighbor, when queuing up in line, please make sure to not block driveways for the airport on your left. We need to make sure not to block entrances for private pilots, flight school and emergency exits.

Kompogas Website: www.kompogas-slo.com

July 2022 Meeting

On July 9th, we met in the CRFG Demonstration Orchard at Cal Poly. We had a fruit tasting where we sampled chapter member's home-grown fruit.

Manny and others enjoying Sharon's home-made lucuma puree

Sharon provided chilled samples of Lucuma puree. Here's what she said:

> "The Lucuma came from my Dad's (Alfredo Chiri) tree in Huntington Beach. He planted two large trees that have a lot of fruit. He passed away and he has friends from CRFG and Master Gardeners in Orange County that pick the fruit and share with me and others. His wife still lives in the house so I can still have access".
>
> "The Lucuma was frozen, thawed, puréed, and refrozen. It is a process that my Dad developed over many years. I added a little water to make the fluid consistency. My daughter worked with my Dad on a marketing plan for Lucuma ice cream and other recipes."

After our co-chair Seth McMillan called the meeting to order, we discussed options for an August 13 chapter BBQ. This is because there was no Festival of Fruit (FOF) as was believed earlier in the year. Putting on a FOF is a lot of work and takes a year of planning! I hope a CRFG chapter starts planning now for August 2023!

Jenny and Sharon on the Alfredo Chiri memorial bench in the orchard (donated by Sharon)

First-timer, Sarah.
Long-timer, Peter

New member Seth (left), and Co-Chair Seth McMillan

Dean Harrell on Identifying and Taking Care of your Soil

Editor's note: Dean Harrell from Cuesta College gave us a lesson on determining soil types and identifying plant nutrient deficiencies. The following article was developed from transcribed video.

Dean Harrel is a regular CRFG member and also a local teacher and soil expert. He is a full-time teacher at Cuesta College North Campus and he started the college's horticulture program about 5 years ago. He has a couple of ag degrees from "another ag school" up north that has beat Cal Poly a few times at football! In his working life, he did ag research in the field and worked in grape and vegetable production. He has even had his own farm. Dean managed to tell us a few interesting stories about some of the research and soil analysis he did in the field, and he told a few jokes that got a lot more laughs from our group, according to Dean, than he normally gets from his students. Maybe we are just old enough to get the humor.

Dean started out by describing some of the soils found in SLO county. He mentioned that it's common to say "dirt" has no biology while "soil" does. Soil has certain characteristics that are obtained from the local geography, the "parent material" as he says (See the gray box below). He showed samples of the Monterey shale formation which is common in the county. The Monterey formation is part of an ancient seabed with marine deposits from the Miocene era (5-to-23 million years ago). This material typically breaks down to create loamy soils.

Parent Material. Rocks!

A. Soil directly reflects the rocks that were weathered to form soil
B. Major types of PM include
   - Silicates (quartz minerals)
   - Carbonates (react with acid)
   - Basalt (lava from volcanos
C. Weathering can occur from physical or chemical forces.

He held up another sample from the West side of Paso Robles and did an acid drop to show the bubbly reaction, then pointed out that this particular rock was a calcium carbonate similar to limestone but not as consolidated.

Dean then passed around some sandstone samples to illustrate soil texture and to make the point that the grainsize in the parent rock will determine the grainsize in soils.

Finally, he held up some serpentine and asked "if you want to buy a property, do you buy the property that has more serpentine or more shale?" The audience voted for shale. The main element in serpentine rock is magnesium, which plants use for chlorophyll production, so it's an essential nutrient for green plants. Plants with a *magnesium deficiency* have yellow leaves as can be seen in Figure 4 at the end of this article.

The problem with serpentine soils is that they may have *too much magnesium* (and high iron) and you may need to amend the soil (at least close to plants) with gypsum (calcium sulfate). See the **green box** below "Most common soil amendments used in California." While putting too much magnesium in soil won't directly affect plant production, it can cause deficiencies in the other nutrients in the soil such as calcium and potassium. When too much magnesium contributes to a deficiency in calcium, the result is limited fruit production and potentially less root formation.

Most common soil amendments used in California

Compost (Organic matter, OM)

Not a soil texture particle.
Size of OM varies from coarse to very fine.
Organic matter feeds the soil microbes.
Organic matter (humus) is great at holding water and nutrients.
Humus is negatively charged.

Gypsum

Gypsum is made of calcium, sulfur and oxygen.
Calcium is used to "open up" clay soils.
Calcium is used to build plant cell walls and make the fruit crunchy!

Sulfur

Sulfur is an element.
Sulfur is an essential nutrient needed to make amino acids for proteins.

Next, Dean did a soil texture demonstration, pointing out that knowing your soil texture can help you know more about watering and compost application. See the blue box below. "Soil Textures is Proportion of Sand, Silt, and Clay." He mentioned that over 90% of the soils in SLO County are clay soils.

Soil Textures is Proportion of Sand, Silt and Clay

Sand

Sand is made from quartz family rocks.
It can be coarse, medium or fine in texture.
Sand holds little water, however the water in sand is available to plants.
Sand holds few nutrients.
Nutrients are easily leached (washed) through the sand.

Silt or Loam

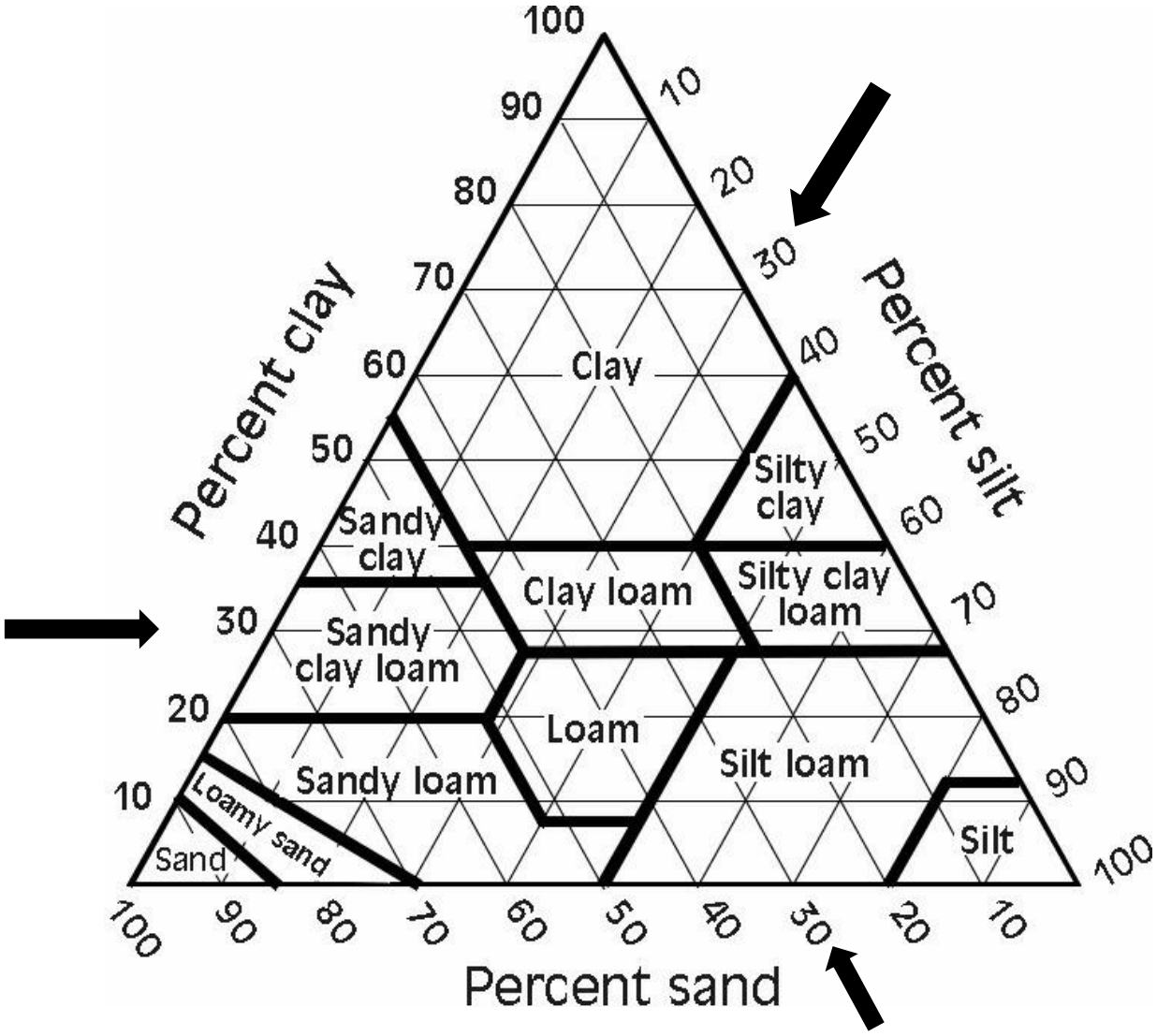
Silt is a fine soil particle weathered for fine grained silicates.
Loamy soils can be found on some west Paso soils.
Loam is generally a mixture of sand, silt and clay particles.
Silt is good at holding water and nutrients.
Water and nutrients are readily available to the plants.

Clay

The finest textured soil.
Clay soils are the most common in San Luis Obispo County.
Clay is good at holding water and nutrients.
Clay particles are negatively charged.

Sharon provided a bag of soil to test from her property near San Miguel. This particular sample was pretty rocky (more like grizzly rocky). Dean sifted the sample to remove rock fragments. He then put a small sample in his palm, wet it down, and stirred it up with his finger. This wet sample separates the grit from the finer silt. It can give you a rough idea of the percentage of sand, silt and clay, which you can determine by referring to the USDA Soil Texture Triangle as shown in Figure 1. Dean determined that Sharon's sample was gritty and about 50% or more sand. A smooth texture would be 25% or less and on the right side of the triangle base (silt).

Figure 1, USDA Soil Texture Triangle



Next, Dean took the rest of Sharon's soil and did the "Wire Test," which is a method developed by a Cal Poly professor to determine clay content. He wet the

sample down and kneaded it to create a firm clump with even moisture. Then he rolled it out like a cigar. "Once you've got a stogie shape about 3 inches long, you pick it up in the middle and hold it between two fingers and watch how it holds up. Does it bend or break?" See the yellow box below "Cal Poly Wire Test" for a description of the different characteristics and the clay content. Sharon's cigar sample bent but did not break, so Dean determined that it had 30-to-38% clay content. Ultimately, Sharon's sample was determined to be a clay loam based on the texture and wire test.

Cal Poly Wire Test
Developed by a professor in the soil science department. Used to determine clay content. Moisten a ball of clay about the size of a walnut. Roll out a thin cigar shaped "wire" that has even thickness from end to end. The wire should be about 3 inches long. Pick up the wire to determine the clay content.

First entry is for % clay; second entry is the wire characteristics
- 0 to 8%; no wire formed
- 8 to 12%; wire can't be picked up
- 12 to 18%; wire breaks as picked up
- 18 to 24%; wire breaks when shaken
- 24 to 30%; wire bends with cracks
- 30 to 38%; wire bends
- greater than 38%; pencil wire does not bend

Palm Test
Field test used to determine sand content.

Take a small amount of soil and put it in the palm of your hand. Wet the soil while rubbing it in a circle. The fine soil particles will wash to the edge of your circle. If the sample feels smooth, sand content is less than 25%. If the sample feels gritty, the sand content is greater than 50%

Combine the data from these two soil tests along with the ribbon test to determine the soil texture.

Ribbon Test
The Natural Resource Conservation Service has prepared the test flowchart shown in Figure 2 at the end of this article to determine the soil texture. This test does not use the wire or palm test described above but is another useful tool.

Dean then proceeded to explain why these tests are important. Once you know your soil type, you know more about how to water and how to fertilize and what nutrients to add to the soil. While clay soils are better at holding moisture than sandy soils, clay also has charged particles that can attract water, and potentially

keep your plants from getting all the water they need. Water can move laterally in clay soil and that is important to know when placing emitters. In contrast, water in sandy soil tends to go straight down, so emitters should be placed with that in mind. He personally likes drip tape and places the tape close together.

Dean said if you want to improve your soil, simply "grow plants." Plants send anywhere from 20%-to-60% of the photosynthetic materials-- the sugars, the proteins, the carbohydrates-- out to the roots where it feeds the "microherd" of microbes living in the soil. If you take care of the soil, you are feeding the microbes and the soil food web. These microbes must be nurtured because they help to bring water and nutrients to plants. The science behind "no-till" is to keep the food web intact.

Dean said he amends his beds at least twice a year with compost and minerals. Both sandy and clay soil benefit from compost, and compost adds carbon that microbes need for energy. He said to give plants lots of organic matter. You don't want to put them on a starvation diet.

Someone asked if you could have too much organic matter. Dean said that "straight organic matter does not have the mineral content you need such as calcium, magnesium, and trace minerals. You need the soil for the minerals. That's where the nutrients come from. Mix compost into the surface about 3 to 4 inches. Water will carry it deeper. They say if you can get the top 1 foot of your soil well tuned, that the plants will do really well."

Next, Dean showed some pictures of struggling fruit. Photo 1 on the next page shows an apple with a calcium deficiency. The spots are characteristic of *bitter pit*. Photo 2 shows tomatoes with the same deficiency. Calcium moves with the transpiration stream through the plant. If there is a shortage of calcium, it can run out before it gets to the fruit. This can be fixed with superfine powder gypsum. This solution-grade gypsum allows microbes to get to the surface of the particle and make it available to the plant. Calcium binds together cell walls in plants, so if you want crisp fruits and vegetables, add calcium. As for how much calcium to use, Dean did a quick calculation and estimated that 1/10 pound per square foot might be about right. Just put near the roots, not over your entire property. Another benefit of calcium is that it helps break up layering of clay soils.

Photo 1, Calcium Deficiency (spots) causes bitter pit in apples.

Photo 2, Calcium Deficiency causes blossom end rot in tomatoes
(also seen in summer squash)

Photo 3 shows a plant with magnesium deficiency called *chlorosis*. In the worst cases, the tissue dies off and leaves brown edges. This condition can be amended with magnesium in the form of Epsom salt. But Dean stressed not to overdo it. If you add too much, you get what he called "snotty" soil, and he mentioned a case where the topsoil slid down a hill. It's best to just add a little near the plant, not all the surrounding soil. When the roots of the plant grow through the area treated with magnesium, they will be better able to pick up the nutrients from the soil.

Photo 3, Magnesium Deficiency in ornamental tree

Photo 4 shows a plant with sulfur deficiency and Photo 5 show a plant with potassium deficiency.

Photo 4, Sulfur Deficiency in sunflower

Photo 5, Potassium Deficiency in grapes.

Someone asked Dean about using horse manure. Dean recommended to apply it the season before you plan to plant due to possible pathogens in the manure. He said to mix it in the soil in the fall and then grow a cover crop. He also pulled out a compost tea extract that he has been making at Cuesta College. He likened it to a carbon soup that feeds the microbes. A typical application of this tea is about 15 to 20 gallons per acre.

Dean also mentioned trace elements such as iron, zinc, and manganese. He said "up in the north country, with our clays, you don't put micronutrients in the soil, you just put them on the plant, but make sure to spray it on dry leaves."

Finally, someone asked about no-till. Dean's comments were "for no till, I just chop the weeds, so they don't grow. You don't want green weeds in your crops because they will win. The main reason tillage is so brutal on soil is that it chops up the fungal strands. The mycelium. Fungi are your friends! They eats weed seeds. Elaine Ingham, who is a goddess of microbiology, says that if you can get enough fungi you will get rid of your weed problems.

You can learn more about Dr. Elaine Ingham's research and organization Soil Foodweb at this address:

https://www.soilfoodweb.com/

Editor's Addendum: Soil Microbes

Dean asked if anyone had follow-up questions to email him. One question I had was: "I have heard it is good to 'feed the microbes' for a healthy soil but how does that work if the microbes eat before the plants"?

Dean's answer is: "Feeding the microbes by creating a healthy soil is a great idea. Here is a recap about the microbes. The microbes eat first before the plants. This is important because if a nutrient is limited the microbe gets what it needs at the expense of the plant. This is an interesting arrangement. This is one reason why we try to supply the nutrients that are deficient in the plant."

If you want to learn more about soil microbes, here is a brief description:

https://www.gardeningknowhow.com/garden-how-to/soil-fertilizers/what-are-microbes-in-soil.htm

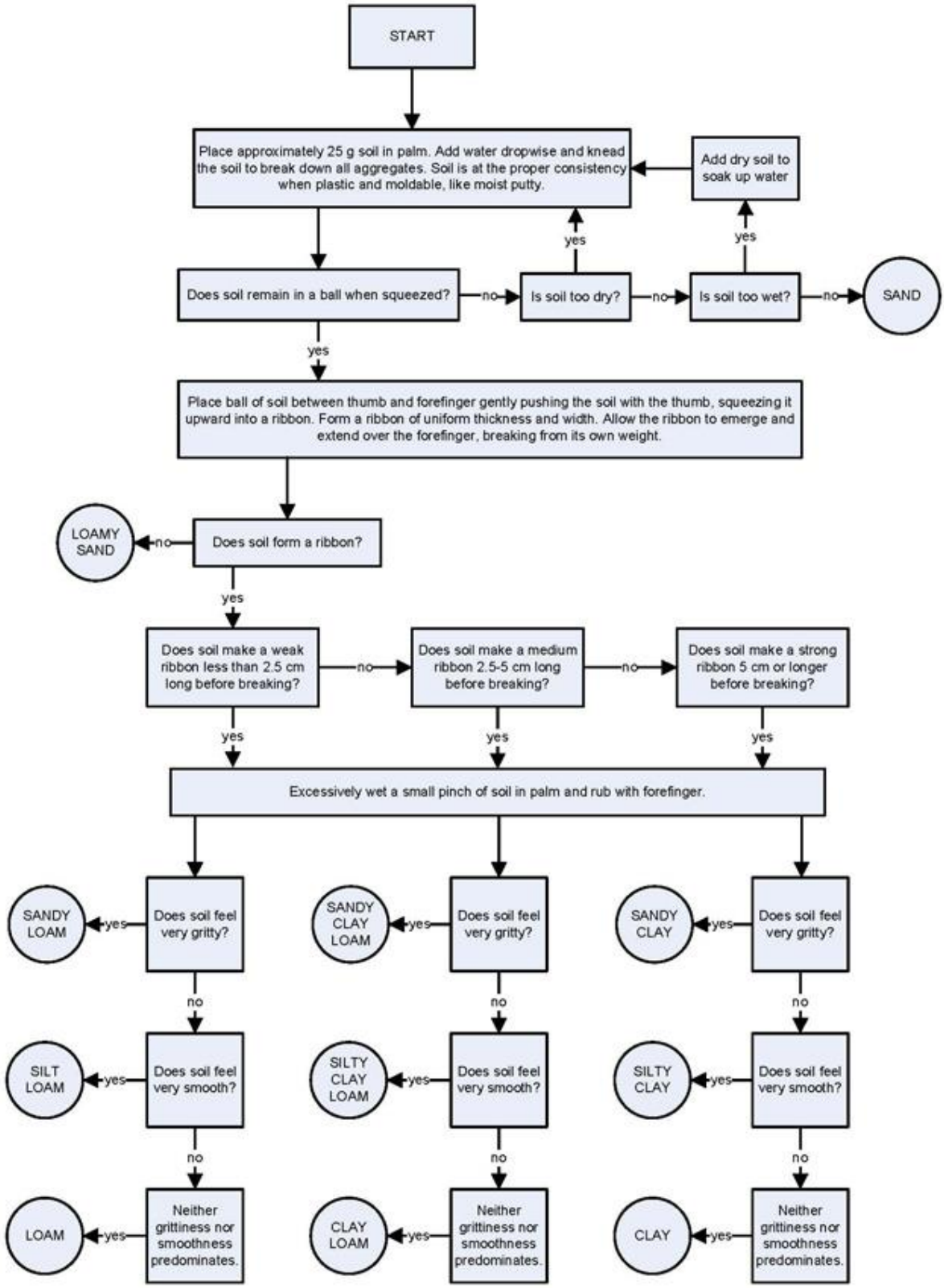
For a more complete discussion, check out Penn State's article about understanding and managing soil microbes.

https://extension.psu.edu/understanding-and-managing-soil-microbes

Here is research done closer to home. Microbial ecology is one of UC Davis professor Scow's primary research areas. What she is trying to understand is how we can refocus agricultural practices "below-ground" and enhance the activity of beneficial microorganisms.

https://www.ucdavis.edu/news/uncovering-hidden-life-soil

Figure 2, Natural Resource Conservation Service Soil Test Flowchart



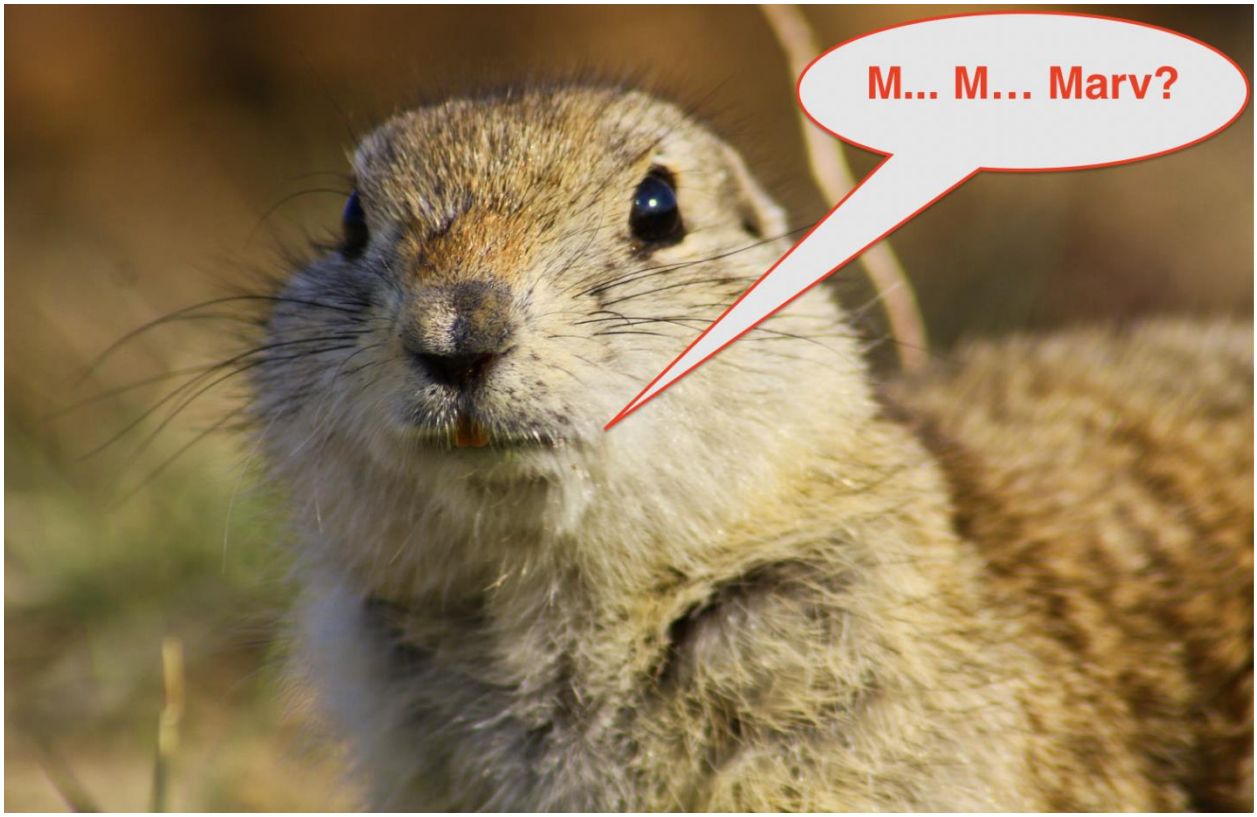
Orchard Workday on Saturday, June 25, 2022 by Dara Manker

The Central Coast Chapter Orchard Co-Managers Jesse Englert, Manny Magaña, and I thank everyone who showed up on this workday and donated their time to make our orchard look amazing.

Here are the tasks we undertook.

Squirrel Abatement

Marv is attempting squirrel eradication by putting dry ice in their holes. He might have succeeded in his mission had this orchard co-manager not greatly underestimated the number of squirrel holes he had to deal with. Marv may continue his squirrel quest later in the year.



Bioreactor Unloaded & Refilled

Before unloading the bioreactor contents, I cut its height down by approximately a foot to make it easier to load and unload.

Just when I began shoveling out the compost, Dick literally jumped in to help! He proceeded to shovel out almost all the compost. A little was left in to jumpstart the next batch.

We scattered the compost around some of the smaller trees.

We refilled it with Sycamore and Oak leaves. Below you see Elaine and Marv reinserting the perforated pipes, a task made more difficult since I didn't remember we needed them until after we'd already started refilling the bioreactor.

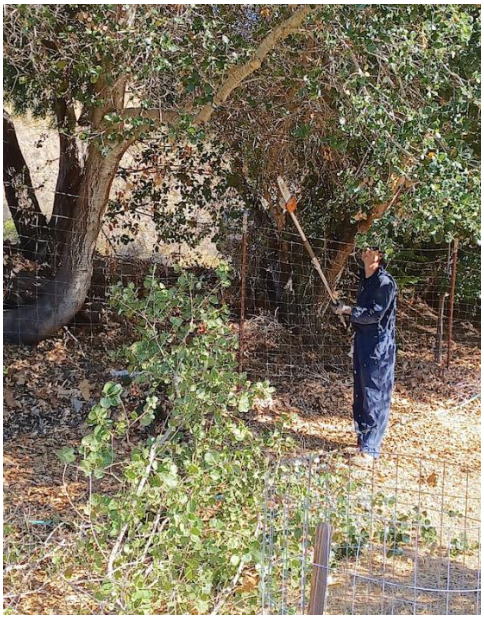
Dick checking out the bioreactor.

Despite being dry for 2 months because the water supply pipe to the orchard was broken, the contents looked good, replete with worms and roots. It looked dark and healthy. Ten points if you can spot the worm in these pictures!*

**Legal disclaimer: These points are non-redeemable and have no cash value.*

Overhanging Branches Removed

Seth removed many overhanging branches along the left and right fences and the Sycamore tree, opening up the orchard to give the fruit trees more access to beautiful sunlight.



Seth removing branches, Nell helps haul limbs to the brush pile

Clean Up

Jenny pulled off an invasive vine that was covering the brush pile.

Heather pruned back lots of poison oak that was growing through the creek-side fence.

Jenny (left), Heather (right)

Larry, Alice, Nell, Sharon, and some others cleaned up the area under the Sycamore tree by the Japanese Maple and the swing.

While working in this area, Larry spotted a leak just outside the orchard fence above Stenner Creek. The Orchard co-managers have reported the leak to Cal Poly.

Larry, Dick, and Mark moving the brush pile

A large pile of tree limbs that Manny had previously sawn from over hanging trees was moved from the front of the orchard to the back brush pile in no time. That's right- you don't see the pile in the above picture: it's already been moved!

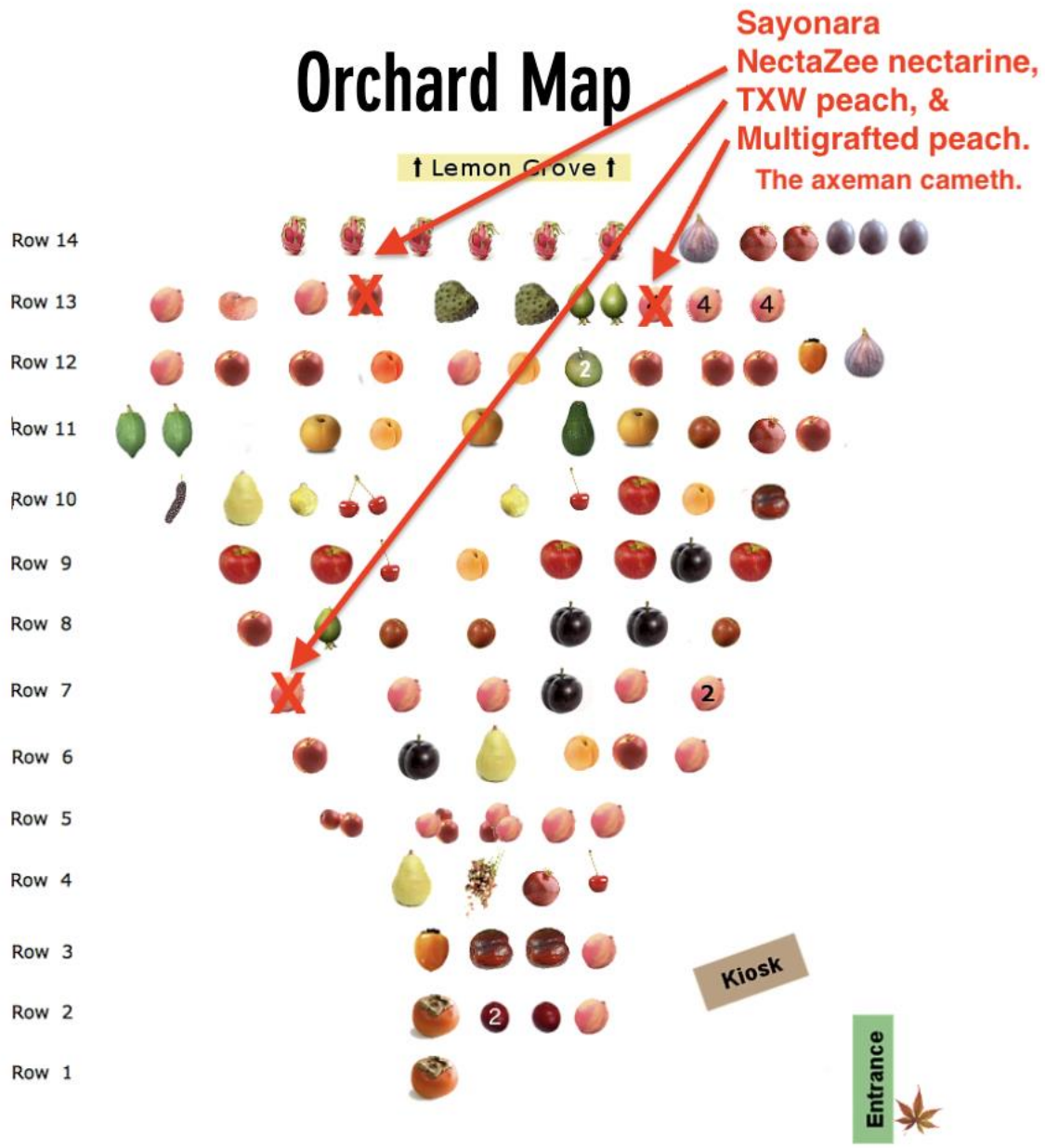
Mark, Jim, Dick, and Elaine by the back brush pile

Weeds, So Many Weeds Removed

Carmela, Mark, Medhi, Gideon, Dean, Larry Lovelady (above, background), and others not pictured here removed the invasive weeds that were covering the back four rows of the orchard.

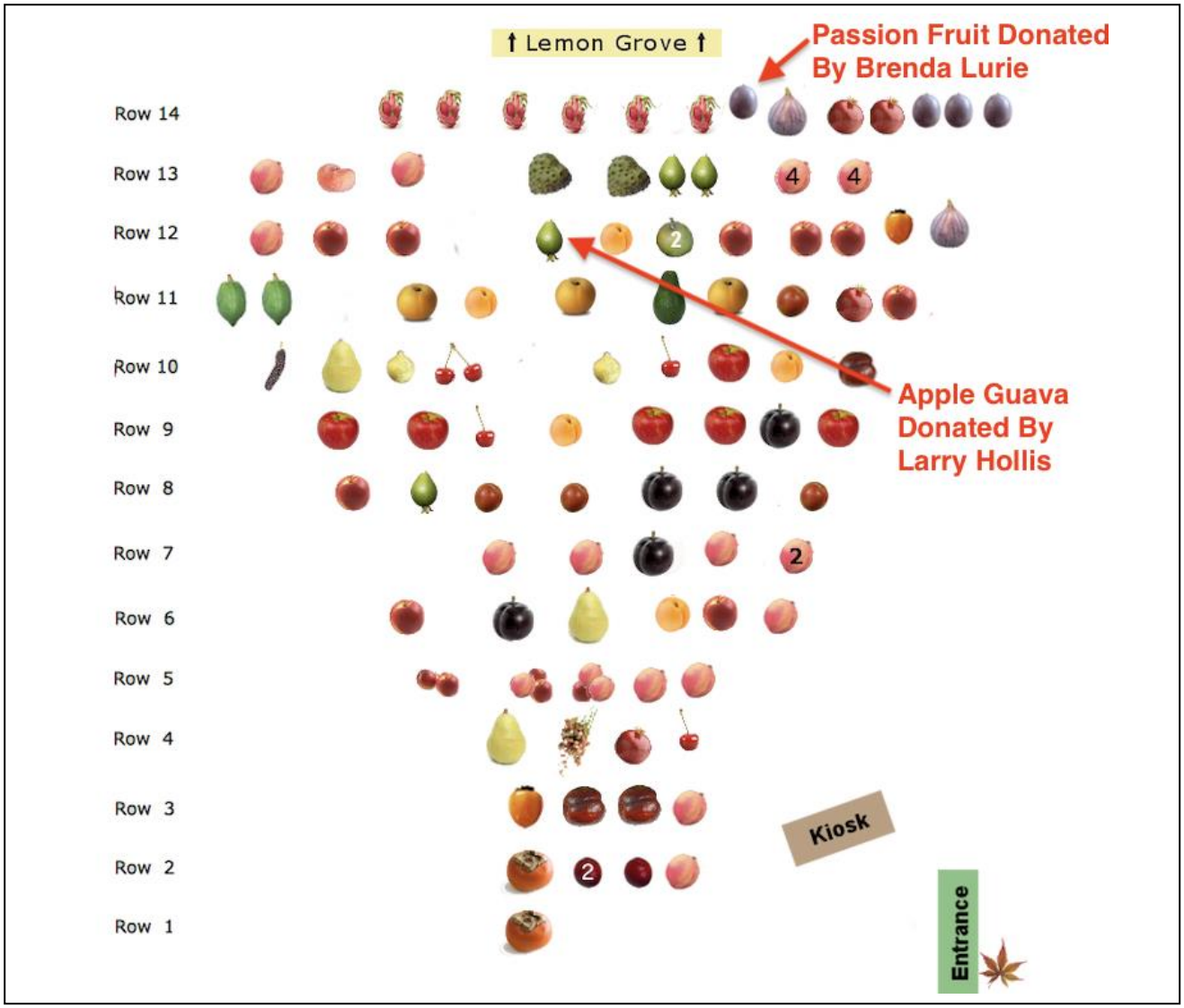
Trees Removed

Manny sawed off dead fruit tree limbs. He also removed the struggling NectaZee nectarine in row 13, a mostly dead TXW peach in row 7, and a multi-grafted peach in row 13 that had one remaining limb of now unknown variety (shown in foreground of picture with Dean and Larry, above).



New Plants

Larry H. donated and planted an Apple Guava that he grew from seed. "Larry Kandarian picked up an apple guava from a vendor at the Santa Monica Farmers' Market (I think) and gave it to me. I started a number of plants from the seeds last summer, but only two survived my long absence this winter. I have an old tree on my property in HI and it is a heavy producer."



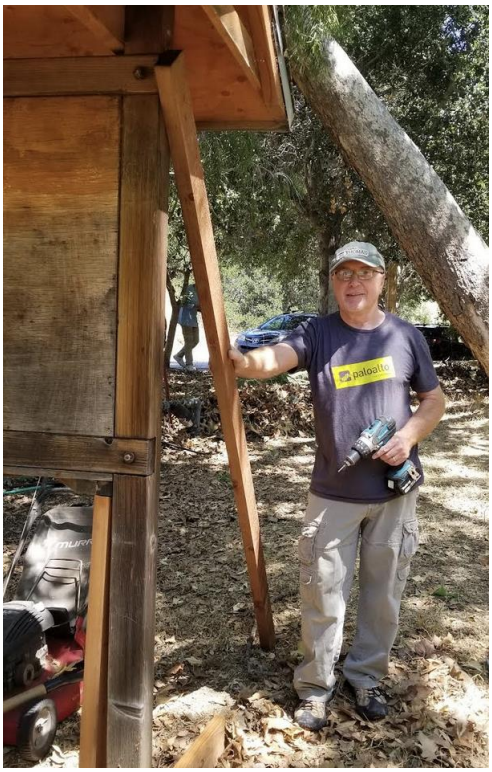
A post on the Nextdoor app advertised a passion fruit plant, so I contacted the poster, Brenda Lurie in Grover Beach. She said she had been given the plant by her grandson 3 years ago, and so it had a great deal of sentimental value. It had born flowers and fruit in past years, but now was outgrowing its pot and not doing as well. I told her why we were interested in it, and she enthusiastically and generously donated it to our Chapter for planting in the CRFG orchard.

Sharon accepted the challenge of planting it by the back fence: she dug out a hole several feet wide and deep in the hard clay soil, added amendments, lined the hole with chicken wire to keep out the gophers, put a fence around it to keep away the deer, and ran a drip line and emitter.

Extra Reinforcement For Kiosk

Tom noticed the kiosk was a little wobbly after last winter's rains. He brought a metal post, cement, and a temporary brace, and thanks to his efforts the kiosk is now standing firm.

Tom also added some screws in the toolshed so that we can now hang up some of the tools.



Well-deserved respite and snacks for a hard-working crew!

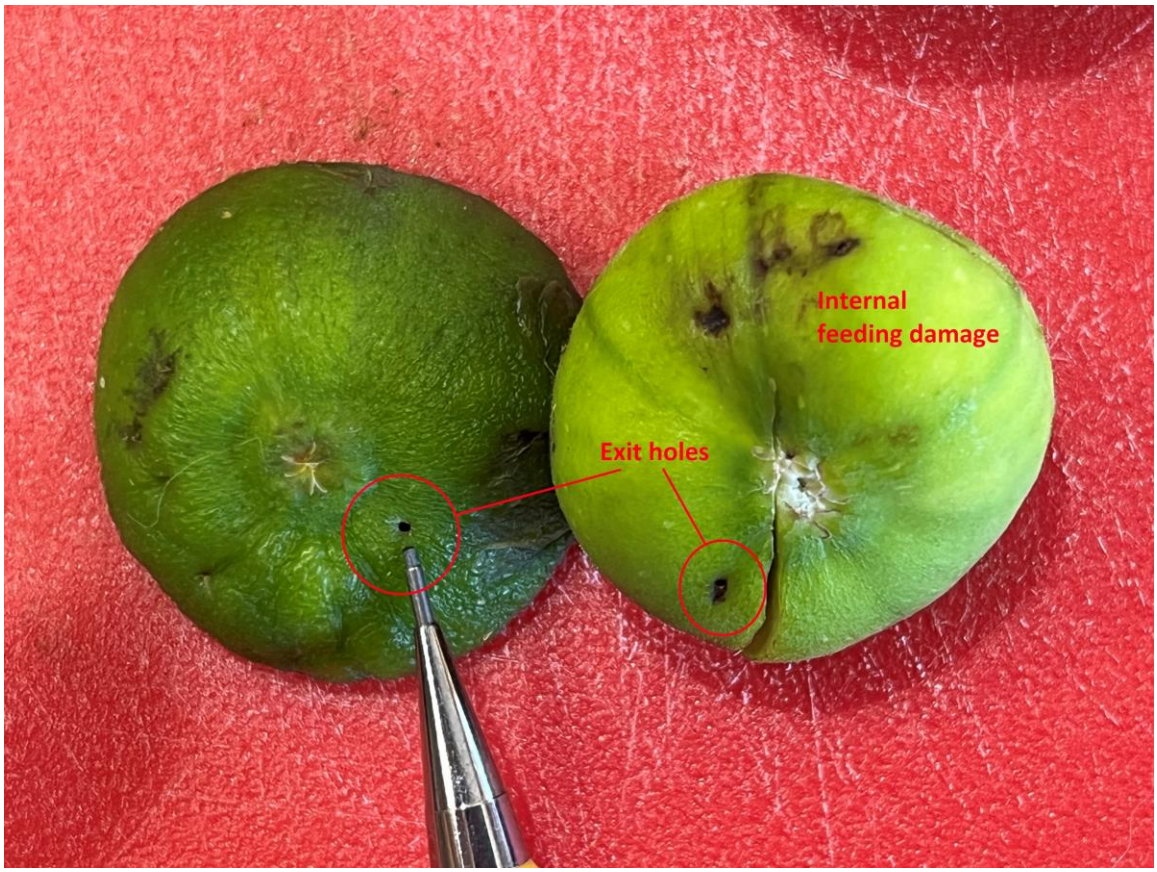
Well done, volunteers! Thank you for all your help!

WHAT'S BUGGING MARV!
Gophers and Black Fig Fly, oh my!

By Jenny Weaver July 16, 2022

Marv showed me his good-sized fig tree that had been recently killed by a gopher! The varmints chewed the main trunk and his tree keeled over. Then the gophers started eating the branches that were laying on the ground!

Sadly, the tree was covered in unripe figs. I discovered one unripe fig on the ground that had the signs of the Black Fig Fly (BFF). I saw a small black spot that is the larva's exit hole and when I opened it up, there was the damaged tunnel of the BFF larva! The damage causes the unripe fig to fall off.



Please note that the "Black Fig Fly" does not refer to black figs! Unfortunately, this pest devours all colors of figs when they are unripe (green).

Because the tree was dead, the fruit would not have a chance of ripening and because it had evidence of BFF, Marv did what a responsible gardener should do. He picked off all the figs and put them in double plastic bags. He will put that in his trash can, not in his green waste can!!

If you suspect you have BFF in your yard, you can cover your figs individually with small jewelry/party favor bags made of lightweight, sheer Organza fabric. The cost is about $8.00 for 100 bags or $14 for 200 bags. I purchased 300 of them on Amazon. I've placed all 300 over unripe figs and ordered 200 more! It's tedious and time consuming, but so far I have gotten some delicious ripe breba figs. I'm hoping my efforts will pay off with a decent main crop later this summer.

If purchasing Organza bags or *anything* on Amazon, remember that you can also help our parent organization CRFG, Inc by using the Smile application when you shop.

Here's the explanation on CRFG Inc's website: https://crfg.org/?s=amazon

> …why not sign in to smile.amazon.com with your regular Amazon credentials and choose California Rare Fruit Growers as your designated charity? It doesn't cost you a cent more and helps us give you more of what you joined us for (well, except for fruit exchanges and face to face meetings in this Time of the Virus).
>
> If you use the Amazon Shopping app on your phone, you can enable Smile in Settings. Just tap "AmazonSmile" and follow the onscreen instructions to complete the process.

Interview with Jack Swords by Tom Sheldon

Most CRFG members know Jack Swords and have even toured his property. For those who don't know, Jack is the "godfather" of our local group. He helped form the original Central Coast chapter of the CRFG back in the 70s with his wife Mary Kay, along with Art Henzgen and his wife Doris. Long-time member Gabrielle Robbins also became involved in the group back in those early days, shortly after they started meeting at the Mid-State Bank building in Nipomo.

Jack Swords in his jungle

On June 28th, 2022, Jenny and Tom had the opportunity to tour Jack's property and interview him about what's going on with his orchard. We also got some history about the early days of the local CRFG chapter. Over the years, there were many scion exchanges and many of the fruit trees and other plants we now grow in this area originated from CRFG members in other chapters. Jack knows much of that history.

I'm writing a two-part story about our adventure and posting a video on the CRFG YouTube channel. In Part 1, which will appear in the August newsletter, Jenny and I take a tour of the property with Jack. In Part 2, which will appear in the September newsletter, I'll cover some of the history.

You can also see our video tour of the property by going to the Central Coast CRFG YouTube site at the link below. Look for the Jack Swords interview. It should be posted by the time you read this. If not, check back in a day or two.

https://www.youtube.com/channel/UCHrKqkelrmBKYXPXO0N7nLg

SUGGESTED VIDEOS AND LINKS

CRFG YouTube Channel

We're building content on our YouTube channel. Stop by and take a look:

https://www.youtube.com/channel/UCHrKqkelrmBKYXPXO0N7nLg

Avocados, Citrus and Minor Subtropicals

Both Larry H. and Robert S. mentioned this newsletter created by UCCE Ventura. Great minds think alike! To read the article, click here:

https://ceventura.ucanr.edu/newsletters/Topics_in_Subtropics94126.pdf

You can subscribe to this quarterly newsletter here:
https://ceventura.ucanr.edu/Com_Ag/Subtropical/

Is Your Avocado a "Type A" Personality? By Tom Spellman.

Larry H. wrote this: "Several times a year I find myself going to the Dave Wilson website to find information about fruit, and there is a lot of information on that site. They have recently updated the site and in digging around I came across avocado information which I hadn't seen before, in fact I didn't think they sold avocado trees. The article by Tom Spellman contains an avocado chart which is a shortened version of one that I printed out years ago and find useful when I want avocado information. I'm sending this article and chart to you in case you think it might be of interest to others".

https://www.davewilson.com/img/content/GardenCompass-avocado.pdf

https://davewilson.com

THE END!!!!!!!!