



Central Coast Chapter CRFG May 2021 Newsletter by CRFG CC Chapter Members

No June Meeting

There will be no meeting in June. Keep propagating plants to share at the CRFG July meeting!

July 10th Meeting Will Be "In Person!"

Great news! July will be our first "in person" meeting since the pandemic hit. We'll be meeting in the CRFG Orchard. So many reasons you'll want to attend:

- Get a workout in the morning, 9am-12pm, hoeing weeds, digging out invasive grasses, removing suckers, raking, painting trunks and limbs to prevent them from burning, or replacing the shingles on the kiosk roof. Or just come and try out the swing Jesse made! Please bring your own shovels, rakes, hoes, and pruners.
- Alisha will be providing lunch! **Be sure to RSVP with Alisha so she can get an accurate head count: 72ali.tee@gmail.com**
- We're trading plants after lunch! Have you accumulated a bunch of plants during the pandemic? Here's your chance to exchange them or just give them away. Bring your bug-free, snail-free, weed-free plants to this meeting to share!



- **Again, be sure to RSVP for lunch with Alisha so she can get an accurate head count: 72ali.tee@gmail.com**

Free Plastic Vegetable Plug Trays

Be prepared for our July meeting! Pick up trays and start propagating now!

Message from Jerry Rutiz of Rutiz Family Farms, via Alisha ([Rutiz Family Farms](#) is located at 1075 The Pike, Arroyo Grande, CA):

Just wondering if any of your group would be interested in free plastic vegetable plug trays. Mostly they are the 288 cell size, with a few 128 and 512 size. The nursery doesn't take them back and the recyclers don't seem to be interested. I have 100s of them...free to a good home! They are of the lighter weight plastic, used once, but definitely have much usable life left.



Feel free to spread the word and give people my email contact: rutizfarms@sbcglobal.net

Alisha In The News!

Nell spotted this article on pages 18-19 of the [March 2020 edition of the Central Coast Journal](#) about our CRFG Chapter's co-chair Alisha and her business, Rock Front Ranch. Her jujubes have been an educational part of local school lunches, including an online virtual tasting with students. Read the full article by Camas Frank via the link above. Thank you Nell for alerting us to this and to Jeff for re-finding the article for me.

Articles Needed For The June Newsletter

Please send your story and pictures to crfgccnewsletter@gmail.com. The deadline is Friday, June 18^h, 2021.

April Newsletter Correction: Sprite/Delight Cherry-Plum Trees

In the April newsletter I stated that we'd planted two new trees in the orchard: two Sprite Cherry-Plum trees donated by Richard Schmidt, and included information indicating that the Sprite requires a Delight for pollination.

After publication Richard gently reminded me that the trees he donated were in fact a Sprite and a Delight. And even cooler than that, the smaller one is a Delight Cherry-Plum, and the larger one is a Sprite Cherry-Plum with a Delight Cherry-Plum graft! We should have a whole lot of pollination going on. My thanks again to Richard for donating the trees, and my apologies for the mistake.

Orchard News

A Passion For Passiflora

Our Chapter member Dixon Smith donated two beautiful passiflora to the orchard.

About The Genus Passiflora

"The genus *Passiflora* is native to North America and South America and contains more than 500 species, so the common name passionflower can actually describe a number of different plants. Some are shrubs, annuals, perennials, and even trees; some also produce edible fruits. They all share exotic flowers that remain open for only about a day. The flower has a wide, flat petal base with five or 10 petals in a flat or reflex circle. Passionflowers are rapid growers and are best planted in spring or early fall while it's still warm." From <https://www.thespruce.com/passion-flowers-1403114>.



Dixon came up with plan for planting passion vines along the sunny fence in the CRFG Orchard. He wrote his idea down in the orchard logbook, and the proposal was enthusiastically received by the orchard co-managers.

He's kickstarted the effort by donating five vines that he propagated.

Dixon has kindly agreed to write an article for a future edition of *The Leaflet* describing his propagation process.

Passiflora edulis

Passiflora edulis, literally "edible passion flower," is commonly known as "purple passionfruit." It is native to Argentina, Brazil and Paraguay. It loves full sun, is loved by butterflies, and flowers on new growth.

[Wikipedia](#) states:

Usually the vine produces a single flower 5–7.5 cm wide at each node.

The flower has 5 oblong, green sepals and 5 white petals. The sepals and petals are 4-6mm in length and form a fringe.

The fruit produced is entirely fleshy (making it botanically a berry), and is spherical to ovoid. The outside color of the berry ranges from dark-purple with fine white specks to light yellow. The fruit is 4–7.5 cm in diameter; purple fruits are smaller, weighing around 35 grams, while yellow fruits are closer to 80 grams

The flavor of the juice is slightly acidic and musky. The passion fruit's flavor can be compared to the guava fruit.



Photo courtesy of Sami Tsang via Unsplash

Passiflora quadrangularis

Wikipedia (https://en.wikipedia.org/wiki/Passiflora_quadrangularis) has the following to say about this intriguing passiflora whose flowers can be up to 5 inches in diameter and whose fruit can be larger than your hand:

It produces the largest fruit of any species within the genus *Passiflora*. It is a perennial climber native to the Neotropics.

It is a vigorous, tender evergreen perennial climber with nodding red flowers, each surrounded by white and purple filaments.....

The fruit juice of the badea is used as a beverage. In some parts of Sri Lanka the fruit [...] is cooked as a vegetable curry, and the seeds are consumed as a snack or used to extract juice.

A tea is made from the leaves which is used for high blood pressure and diabetes. A drink and ice-cream are made from the fruit.

I could not find a non-copyrighted picture of this flower, but it's [well worth a look](#). And follow this link to a picture of the [huge fruit](#): it is a sight to behold!

Bioreactor Built and Filled!

The CRFG Demonstration Orchard bioreactor was built on Saturday, April 3rd, 2021 and filled on Saturday, April 24th.

We will build another orchard bioreactor 5 months from now. If you want to take part in it, just let us know at crfgccnewsletter@gmail.com.

Here is the story of its construction and fill.



Central Coast CRFG Orchard Bioreactor

Tim LaSalle gave a presentation on BEAM (Biologically Enhanced Agricultural Management) at our February Chapter meeting

See: <https://www.csuchico.edu/regenerativeagriculture/bioreactor/>

He told us about the Johnson-Su Bioreactor devised by Dr. David Johnson and his wife Hui-Chun Su.



Picture from Chico State website

This bioreactor:

- Makes a BEAM fungal-dominant compost
- Replaces soil microbes in soil.
- Improves soil health by increasing the amount of microbes and fungi. Traditional agriculture methods deplete microbes. The bioreactor compost enables normal symbiosis between plant roots and the microbes.
- The soil recovers rapidly, “enhancing crop yields, water retention, plant water use efficiency and carbon sequestration.”

Bioreactor:

- Produces clay-like fungal-dominant compost
- Takes 1 year
- Never need to turn the contents
- Aerobic: air flows up through the holes initially created by pipes
- Kept at 70% moisture content
- Worms can be added after temp comes down about 80 deg F

Tim LaSalle's Talk Is Inspiring... "Let's Build One!"

After Tim's presentation, Jesse, Manny, Else, and Dara decided, "This sounds like a fun project! Let's do it."

Sat April 3rd: Built it: ~ 3 hours.

Sat April 24th: Filled it and installed drip line/emitters: ~ 5 hours.

Part 1: Building The Bioreactor

Supplies

Item	Source	Qty	Total Price
Pallet	Craigslist	1	Free
Remesh	Donated by Tim LaSalle	13'	Free
Wire	Donated by Adela	1 roll	Free
PVC Pipes	Home Depot	4 @ 10'	\$42
PVC Glue	Home Depot	1 can	\$ 5
Weed Fabric	Meir Bros in AG	20'x6'	\$29
Drip Lines	CRFG Orchard		Free-ish
Emitters	Home Depot	25	\$ 8
Four-way Faucet	Miner's Ace Hardware	1	\$18
Drip Water Timers	Miner's Ace Hardware	2	\$85
AA Batteries	Rite Aid	4	\$ 7

Total: \$192

Scoping Out The Location

Chosen for shade and proximity to water source



Manny removed leaves and twigs; Jesse and kids leveled out the dirt surface.



Chris And Kids Head Off To Cal Poly U-Pick



Sewing Fabric to Remesh



Jesse and Dara stretched out the weed fabric and remesh, and sewed the fabric to the remesh.





This overhand stitching technique proved slow and unnecessary. Much better to use the straight-through stitching technique shown in the bioreactor construction video.

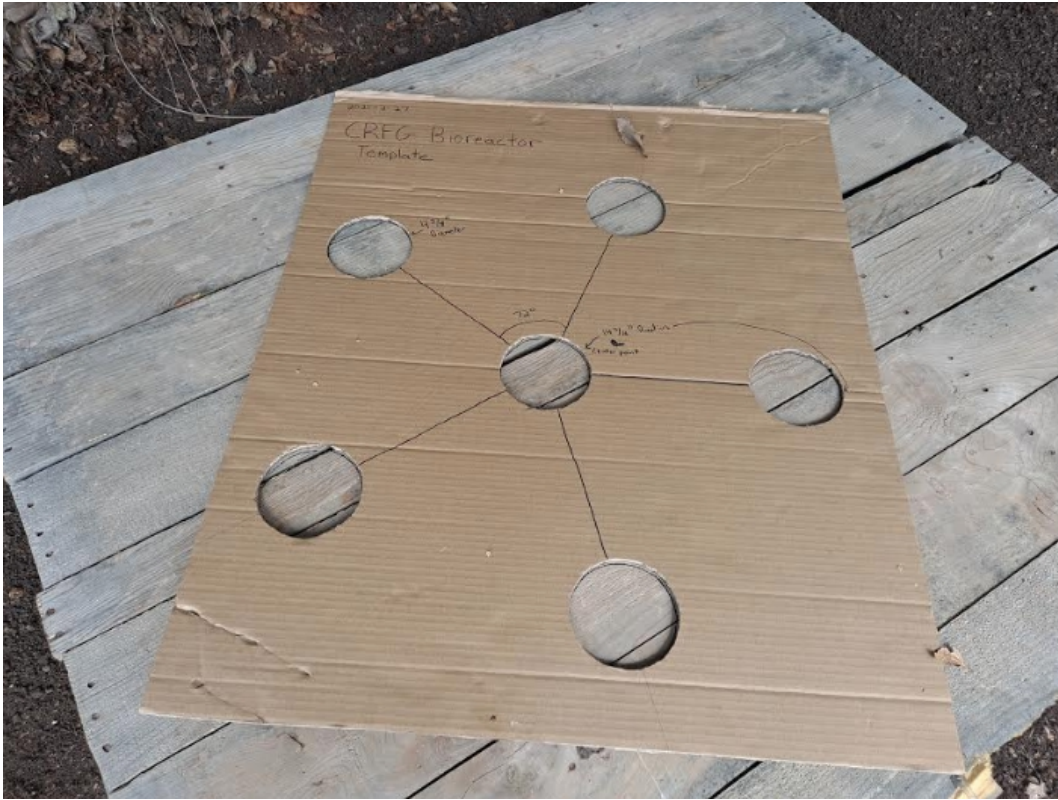
Tying The Remesh

The ends of the remesh are secured to create a sturdy cylinder.



Template For Pipe Holes

Jesse created the template at home in advance.



Dara cut holes in the pallet with a jigsaw. This awkward position is what happens when you're wearing bifocal sunglasses in the shade and wearing a mask for Covid-19 safety so you can't blow the dust away from your cutting lines so that you can see them.





This is how the pros do it.
Jesse teaches Henry how to
use the jig saw.

Now the holes are cut
and we're ready to
cover the pallet with
weed fabric.





Once the pallet is covered, holes need to be cut in the fabric to allow the pipes to be inserted.



The Bioreactor Needed Six 6' Pipes



As per the instructions on the Chico website, we purchased 4 perforated 4" diameter 10' pipes.

How are your math skills? This next part should be a math quiz worth 5 points.

Dara cut these pipes into 6 foot pieces. So now we had four 6' pipes (perfect!) and four 4' pipes.

To create the other two 6' pipes, Dara glued the 4' pipes together, then cut them into 6' lengths. Now we had six 6' lengths (perfect!). We also had two 2' extraneous pieces that, if you are a product of the Depression Era or had

parents who were, you will hold on to for some future project which will never arise until the day after you finally decide to throw them away.

Jesse mentioned that when he pulled the pipes out a week after the bioreactor was filled, the two glued pipes came apart and were difficult to pull out. He says this is apparently fairly common, so next time we will use 6 full pipes.

We installed the frame on the pallet, securing it with screws. We then inserted the pipes into the bioreactor and through the holes in the pallet below.





The pipes needed some device to keep them vertical for the loading process.

This picture of a very nice rebar jig is from Chico State's Website.



We didn't have rebar or a welder, so I (Dara) tried to make a jig out of wood and yogurt containers. Don't try this at home because... this was a serious fail! It fell apart while being taken from the house to the car, and my stubborn attempts to resurrect it on-site were futile.

My second attempt with the bamboo stakes that Larry donated to the orchard (and to any member who needs them- just drop by the orchard and take what you need!) was more successful.

The rig keeps the pipes in place while you're filling the reactor. I thought the stakes might get in our way when loading it, but they really didn't. It was nice to have them so we didn't have to worry about keeping the pipes upright during the filling process.



♪♪ Ta-Da!!! ♪♪



After this picture was taken, we cut the fabric away from the sides of the pallet so that air could circulate freely.

Part 2: Filling The Bioreactor

- Sycamore leaves (free in the Orchard)
- Mulch (free from the county)
- Organic chicken manure (free from Craigslist)
- 1 Bag of shredded paper (free from Dara's paper shredder)
- 2 Buckets of completed bioreactor compost (free from Alisha)



Our team discusses the fill process. Left to right: Else, Jesse, Henry, Maggie, Manny, and Dara taking picture.



A truckload of gorgeous mulch free from SLO County. We used about a third for the bioreactor.



Henry and Maggie spread mulch around some of the younger trees.



We discussed our options for loading the bioreactor:

A. Put the ingredients in dry by the bucketful and then spray them with the hose,

OR

B. Soak them first and then load them by the bucketful.

Initially we chose option "A" thinking that lifting buckets would be easier without the additional weight of water.

However, we soon switched to option "B" when we discovered that thoroughly soaking the contents in the bioreactor required much more moving them around with a long stick, not an easy task with all the pipes in place.



We also ended up soaking the contents with a hose once they were in the bioreactor just to make sure they were wetted thoroughly.



A plethora of Sycamore leaves were available.

Plan B: Wet the contents first!





Else used a pitchfork to turn the leaves, ensuring that they were well-soaked.



Jesse prodded the contents with a long stick to make sure they were evenly distributed, pushing them between the pipes and the bioreactor frame, and lightly tamping them down.

The Crew In Action!

We rotated jobs every so often to make sure we all had the full experience.



Slightly full...



Getting fuller...



Full at last!!!



We bought a four-way faucet manifold so we'd have enough room for the hose and a free outlet for washing our hands. We also bought two timers in order to have a redundant watering system. Each timer waters the bioreactor for one minute each day: one is set for the morning, and one for the afternoon. That way if one stops working we have a backup. The contents must stay wet for the entire year or else we have to start all over.



Manny uncoils the drip line tubing.



Manny ran two drip lines from their timers on the faucets to the bioreactor.

We coiled the drip lines around the inside edge of the bioreactor just above its contents. We fastened them to the frame with wire. (We used the same coil of wire we'd used to stitch the fabric to the remesh.)

We added adjustable multi-stream emitters to each drip line, which wet the edges (see picture below).

To ensure that the center was also getting wet, we added smaller diameter drip line with emitters, connected them to the larger drip line, and placed those emitters near the middle.

Our bioreactor is in the shade and seems to stay wet, so we did not cover the top with landscape fabric. If yours is in the sun, you may want to.





If You Want To Make Your Own

We can lend you:

- 6 PVC Pipes
- Template
- Bamboo Jig
- Pallets- there are 3 available in the orchard under the Sycamore tree.

Your bioreactor does not need to be this large.

A few weeks ago we built another bioreactor for a home orchard. This bioreactor was approximately four feet tall and a few inches narrower in diameter. We used a strong fencing wire, and it handled the volume with no problems. The four foot height made loading the reactor much easier. We built, filled, and installed the drip line and emitters in about 4 hours.