Central Coast Chapter CRFG
February 2021 Newsletter

by CRFG CC Chapter Members
Edited by Dara Manker

February's Meeting

We had a terrific, inspiring talk by Tim LaSalle about BEAM (Biologically Enhanced Agricultural Management). You'll find a summary on page 12 of this newsletter.

March Meeting Notice

March's Chapter meeting will be held on Saturday, March 13th. The agenda is still to be determined. Look for details closer to the event on our website:

https://www.crfg-central.org/calendar

Articles Needed For The March Newsletter!

Please send your story and pictures to crfgccnewsletter@gmail.com. The March newsletter deadline is Sunday, March 21st, 2021.

Treasurer's Report

Our chapter treasurer received a donation check for $100 this month. The note attached read: "A thank you to Larry Hollis for pruning my peach tree."
Way to go Larry!

2021 Central Coast Chapter Officers & Board Members

Chapter Officers

Co-Chairs: Alisha Taff and Tucker Schmidt

Secretary: Linda Robertson

Treasurer: Dick Pottratz

Board Members

Program Committee: Joe Sabol, Chair; Larry Hollis, Elaine Rathbun, Art DeKleine, Nell Wade, Roger Eberhardt, Jim Ritterbush

State CRFG Liaison: Joe Sabol

Apple Grafting Coordinators: Joe Sabol, Marvin Daniels

Christmas Party Venue: Marv Daniels

Demonstration Orchard Co-Managers: Manny Magaña, Dara Manker, Jesse Englert

Hospitality Committee Chair: Evelyn Ruehr; Karen Kolba, Eliane Rathbun

Master Gardeners Liaison: Linda Robertson

Membership, Info. Coordinators: Choung Crowe, Gloria DeKleine, Maureen and Pat Moudakis

Newsletter Editor: Lori Bright; editor pro tem: Dara Manker

Nominating Committee: Larry Hollis, Chair; Lark Carter, Art DeKleine

Photographer: Joe Sabol

Pruning Resource Consultant: Marv Daniels

Publicity: Joe Sabol

Raffle Coordinators: Kathy Longacre, Nell Wade

Refreshments: Volunteers Alphabetically Designated: A-H, I-Q, R-Z.

Scholarship Program: Lauren Garner, Chair; Joe Sabol, Marv and Pet Daniels, Dave Christie, Nell Wade, Karen Kolba, Tucker Schmidt

Scion Exchange Co-Chairs: Carol and Robert Scott

Scion Exchange Store-Supplies Chair: Roxy James

Scion Exchange Root Stock & Graft Chair: Nell Wade

Secretary: Linda Robertson

Webmaster: Dara Manker

Board of Directors: The above listed officers and Committee Chairs plus: Lark Carter, John Crowe, Les Ferreira, Nancy Lehman, David Maislen, Jim Ritterbush, Gabriella Robbins, Bob Tullock, Jenny Weaver

Rooted Daffodils Planted While Dark and Cool
by Paul Rys

I just finished planting around 150-200 daffodil bulbs in my front yard. They were growing too thick in the raised bed in my back field, and were not going to grow much larger sardine style. All of them had roots, so I have been very careful transplanting them, and now they are happy, with room to grow. I left a couple of clumps together as an experiment, to see how they do. All of these clumps with many bulbs started as just one small bulb when planted almost exactly 4 years ago. Next month's Newsletter will show these daffodils in bloom!

The Quiet Garden
by Linda Robertson

In addition to being a happy member of CRFG, I'm also a Master Gardener. Every Wednesday morning, I go to our MG chapter's demonstration garden on Sierra Street to water the pots and flats of plants we're growing for our plant sales. CRFG has always had a booth at the sales, with volunteers selling grafted trees and dragon fruit. Even between sales, the garden used to be a lively place. We had work days, meetings, docent tours, and monthly talks when we invited the public to learn about different aspects of gardening and look at our flowerbeds, orchard, and vegetable garden. In March every year, CRFG held a grafting clinic in the garden, teaching new and experienced home gardeners the art of making trees from scions and rootstocks. And then, last March, everything changed.

When the pandemic hit, we were advised to stay home and keep our distance from one another, and the garden became a quiet, almost lonely place. Volunteers still come to make sure that the orchard trees are sprayed and pruned and the drip irrigation is working, to plant the kitchen garden and the raised beds of annuals, and to harvest vegetables and fruit to donate to the SLO Food Bank. But the groups are smaller, the work parties shorter, and instead of monthly talks we've gotten creative and are making Instagram and You Tube videos. Some of us have had to put volunteering, and the fun and joy that comes with it, on hold until things are safer.

On my Wednesday trips, masked and gloved, I am often completely alone in the garden except for the trees and the plants and maybe a phoebe, a kinglet, a noisy mockingbird running through its repertoire of songs, or the occasional Monarch butterfly stopping to lay its eggs on the milkweed. The trees flower and fruit, the garden grows its peas, carrots, beans, lettuce, tomatoes, with few people present to admire their beauty and abundance.

It's been about a year now, almost time for what would have been the next grafting clinic, except that the clinic will have to be put off until next year. The public, the people in our community, who are in many ways the whole point of having the garden, still can't come to see all that we have been doing. But with more and more of us being vaccinated, it seems finally that a return to a more normal rhythm of life is in sight. The plum and peach trees in the orchard are starting to bloom, and the figs beginning to leaf out. With luck, by the time their fruit is ripe, we may be back to the fun of work days and gardening talks and plant sales and then, of course, a grafting clinic early in 2022. I think we're all looking forward to it.

Macadamias in Nipomo
by Jack Swords

Forty-six years ago as early members of the CRFG, Mary Kay and I moved to our 1 ½ acres on the Nipomo Mesa. We were told by a local nurseryman that it was too cold to grow Macadamias here and that they would be killed with the winter freezes. "Besides, macadamias are from the Hawaiian Islands and need a tropical climate."

These challenges became the main reason that I have far too many macadamia trees growing on our property, shading and otherwise limiting space for other plantings.
Young nut cluster

Macadamia trees thrive in our climate, prefer the cooler California coast, are evergreen and drought resistant, notwithstanding that they produce and freely drop great quantities of sought-out expensive nuts.

Originating in Australia, and then being planted in Hawaii about 1881 creating a large macadamia industry, they are grown commercially in many parts of the world, including the United States, mainly in the San Diego area.

These trees can be planted from fresh seed, but may take up to 7 years before fruiting. Grafting the seedling shortens the time to fruiting and can also result in a tree producing a known quality of nuts. The scionwood needs to be girdled several months before grafting to greatly improve successful takes. Once production starts, the tree can produce nuts for close to 100 years.

The typical size of the tree is 30 X 30 ft, but they are slow growing. Trees are self fertile and pollinated by bees. They prefer a slightly acid soil and can take frosts near 24º F when mature. Young trees can be killed by a hard frost.
Mature macadamia tree

Besides being an evergreen and drought resistant, macadamias require little fertilization due to Proteoid roots (yes, macadamia is in the Protea family) which form dense clusters of short lateral rootlets under the tree. It is the poor soils in Australia that has led to the Proteoid root development and makes the tree able to be efficient in obtaining nutrients from soils. In fact, it is easy to overfertilize a macadamia tree (or other Proteas), especially with phosphorous (the middle letter NPK) in fertilizer contents. Generally Proteas need no additional phosphorus added to their culture.

An evergreen tree, drought resistant, self pollinating, little fertilization, few pests, and produces large quantities of expensive nuts sounds too good to be true. That

is the macadamia tree.

The two main types of macadamia grown for the nuts are M. integrifolia and M. tetraphylla. Most Hawaiian trees are M. integrifolia, most trees grown in California are M. tetraphylla. M. tetraphylla has a sweeter nut kernel and somewhat spiky leaves, is somewhat frost resistant and enjoys our cool California coastal climate. M. integrifolia has long racemes of flowers that are white, M. tetraphylla has racemes of flowers that are pink.
Pink raceme flowers from M. tetraphylla

Here in Nipomo we have around 50 producing trees, 27 are seedlings, 25 are grafted to selected cultivars. Other than the longer wait time for fruiting in a seedling tree, they produce excellent nuts. The advantage in the grafted tree, is earlier production, and one can expect an identical nut quality as in the parent tree. Some of the grafted cultivars growing here in Nipomo are: Beaumont (a hybrid, perfect dooryard tree, produces year-round), Cate (noted commercial variety in San Diego County), Several HAES (Hawaii Agricultural Experimental Station) varieties, Z-3 (a large nut, sweeter than others), Elimbah, Durambah, and my favorite, Old Lady Babcock (field collected from a seedling tree – nice lady though). Again, the seedling trees all produce excellent nuts and grow well in our climate.
Nutlets on raceme

Macadamia nuts that drop in the fall of the year can be picked up daily and the husk removed. They shouldn't be picked from the tree. The resultant shelled nut needs to be dried for several weeks and then may be roasted in a low heated oven. Roasted and dried nuts crack the easiest. Nevertheless, the macadamia shell seems, at times, indestructible. A hammer works, a pair of vise grips with one side ground down to an edge works, a common vise also works. I use a commercial cracker with good leverage to crack and obtain an intact kernel. (illustration) Raw nuts can be roasted or eaten. Macadamia nuts have about 76% fat, but it is a monounsaturated fat.
Cracking nuts

Commercial macadamia nut cracker

Tree rat and crow varmits

Baited trap for tree rats

Macadamia nuts for cookies

Obtaining a macadamia tree from local nurseries may prove to be difficult. A trip down to nurseries in the San Diego area should be successful. Getting fresh nuts (must be fresh to germinate) from one of the local members of the CRFG would be easier and cheaper. Once the small plant grows to ¼ inch in diameter or more it can be grafted. Not the easiest to graft, girdling the scionwood about 3-4 months in advance to cutting the scionwood usually results in 100% takes. A whip graft is easiest. I also use a small block plane as the wood is quite hard. Scionwood is available from local CRFG members.

Grafting knife and splice graft

February Zoom Meeting

We had 35 participants in our Zoom meeting on Saturday, February 20, 2021. Thank you Art for hosting, and Keri for the technical support.

Agenda

- Welcome and Introductions
    - Tucker's welcome (1 min)
    - Tucker's introduction of new participants (3 mins)
    - 2021 Officer Election Report – Larry (3 mins)
    - The Leaflet Editors' Report – Dara (2 mins)
    - CRFG Orchard report – Manny, Dara, Jesse (2 mins)
- Joe's welcoming and comments about root, pheromone, and grafting tape drive-through purchases (4 mins)
- Tucker's Introduction of Dr. Tim LaSalle (2 mins)
- The Wonderment of BEAM (30-45 mins)
  Dr. LaSalle will share his wisdom and research on regenerative agriculture, sustainability in agriculture, soil health, and the importance of soil microbial diversity.
- New Business and General Comments (1 min)

Welcome and Introduction

Tucker welcomed all members and new participants.

2021 Officer Election Report

Larry reconfirmed that all the 2020 officers and board members have agreed to fill their seats through 2021. Dara showed where a list of these positions can be found at the end of the website's "About" page.

The Leaflet Editors' Report

Please, please, send your pictures and articles to: crfgccnewsletter@gmail.com

CRFG Orchard Report

- The unknown variety of plum in row 2 that never bore fruit has been chopped down.
- Two Sprite Cherry-Plum trees donated by Richard Schmidt were planted in row 2.
- Jesse grafted the sapote with four varieties: Vernon, Santa Cruz, Nettie, & Suebelle. He obtained the scions from Larry.

Root, Pheromone, and Grafting Tape Drive-through Purchases

Will be held at Santa Rosa Park on Saturday, February 27th from 1:30-3pm.

Guest Speaker Dr. Tim LaSalle: The Wonderment of BEAM

Introduction

Tim has an extensive list of credentials. He's a member of our local CRFG chapter and professor emeritus of California Polytechnic State University. He's co-founder of The Center for Regenerative Agriculture; director of outreach & development; served as the first CEO of Rodale Institute; executive director of the Allan Savory Center for Holistic Management; consultant, advisor, and research coordinator for the Howard Buffett Foundation in Africa on soils and food security for smallholder farmers. He is former president/CEO of the California Agriculture Leadership Program where he arranged educational leadership programs in more than 80 countries with heads of state, ministers, and community leaders.

Links:

- Center for Regenerative Architecture at CSU Chico
- How to Build Your Own Bioreactor

The Wonderment of BEAM

Tim delighted us with an engaging talk about Biologically Enhanced Agricultural Management (BEAM).

He encouraged us to break free of paradigm paralysis- to engage in a different way of thinking about plants, soils, and microbiology than that which we've been taught.

He persuaded us by using a variety of examples.

One example: we have been taught that water freezes at 32°F. But, he says, pure water freezes at -40°F. It is the proteins on the bacterium *Pseudomonas syringae* that can cause water to freeze at a higher temperature.

He spoke of the importance of healthy biomes in our gut, on our skin, and in our lungs. We feed them, and they feed us. We can influence these biomes with what we eat, how we live. We and other animals tend to be healthier when exposed to the biomes in our natural environments than attempting to protect ourselves by living in a sterile one.

We need to change our paradigm from viewing soil from a geochemical point of view, i.e. dumping fertilizers into the soil in an attempt to enrich it. Tim says with the correct biology, a square meter can be more productive than a tropical rainforest. The correct fungal varieties can decompose toxins in the soil, create quorums that provide nutrients to plants, and even free bound-up minerals in the soil, such as phosphorus, and deliver them to plants.

Tim stressed that fungi communities are essential, that nitrogen fertilizer is not needed if one has the correct ratio of fungi to bacteria in the soil. He presented

several studies where BEAM was used vs. conventional application of fertilizer, along with convincing pictures showing lush crops produced by BEAM alongside their visibly less productive conventional counterparts. BEAM saves farmers the money they would have spent on fertilizers, and increases the productivity of their crops.

Conventional soils are bacterial dominant, which weeds like. But when soils have a ratio of 4:1 fungi to bacteria, weeds are not so happy. Trees do better at 400:1. BEAM induces 50 times greater root structure, allowing plants access to more water and nutrients.

Humans have been destroying the fungal network by both tillage and fertilizer. Tim likened using herbicides and fungicides on soil to killing off your gut biome with antibiotics.

He showed us a picture of a scraggly tree with one very verdant limb. He assured us that the limb was not a graft- it had in fact been sprayed with the product of a bioreactor.

Bioreactors create a fungal-rich, clay-like compost rich with microorganisms. They are being built everywhere from Kenya to Arroyo Grande.

Alisha has been using BEAM at her business, Rock Front Ranch, and will be using it in her Jujube orchard.

The San Luis Obispo City Farm has made a bioreactor.

You can build one in your own backyard. You don't even have to turn the contents, you just have to make sure they stay moist. It takes a year for the reactor to complete its work, and the microorganisms appear in the last month.

The inoculant can be applied directly on seeds when planting to increase germination rates, applied directly to or sprayed on soil to increase its carbon content, water retention and filtration, which increases the health and growth of plants.

Create a spray by making it into a liquid: mix with water, stir vigorously, pour through a strainer, then put it into a sprayer. 1 kilogram can inoculate an acre.

A study is underway to determine if using cover crops with biological inoculant can also help save water.

Orchard Co-Managers (Manny, Jesse, Dara) will be making a Bioreactor for the Orchard. We'll document the process and include it in a future newsletter. We'll let you know when it's in the orchard so you can come check it out!

See the links at the top of this write-up for more information about BEAM and how to build your own bioreactor. Then register and become part of the community that is discussing this. Share your own story!

Joe Sabol encourages everyone to get a journal to keep notes and take pictures of your experience with your bioreactor. We'll share at a future meeting. We

would also like to share your experiences in the newsletter. Please send your stories and pictures to crfgccnewsletter@gmail.com.