



# The Fruit Leaf

Santa Clara Valley Chapter

California Rare Fruit Growers, Inc.

May/June  
2007



Thank you, Piyush, for  
helping end of meeting

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## Newsletter

Submit articles, pictures, cartoons  
by email:

Sue Cancilla-Conde  
weedeater@earthlink.net

Or snail mail:  
4698 Englewood Drive,  
San Jose CA 95129

Our Organization's URL  
<http://www.crfg.org/>

## June Meeting Invitation

Nancy Garrison

Please attend our next meeting  
June 9, 2007

Emma Prusch Park, doors open at noon  
Meeting 1:00 to 4:00pm

This will be our annual summer potluck and round table get together at Prusch Park and will go from 1:00 PM – 4:00 PM as usual. Bring any dish – preferably made from something from your garden to share with a list of ingredients so anyone with diet restrictions can choose accordingly. Recipes are especially appreciated. I will bring home grown herbal iced teas and lemonade for all. If you like something different please do to bring it, I'm not assigning by alphabet, as I don't want to restrict what people might have from their gardens. Bring your own plates – cups and eating utensils to be eco – friendly. We'll have some extras in case you forget.

The round table is our opportunity to share our experiences from the garden – especially our fruit stuff. I'd like to hear what folks are doing that is working or not working and what might be the contributing factors. Show and tell any garden tools or accessories that you wouldn't want to live without – special weeders, hand tools, labels, whatever ....

I will provide an update to members regarding the light brown apple moth and restrictions on movement of plant material as it relates to the light brown apple moth. The quarantine changes frequently and there can be NO movement of plant from or within the defined area.

If you are not in the quarantine area at the time of the meeting we hope you will bring fruit from your garden to taste – labeled by type of fruit – variety and grower.

## Nancy's Blogett

What's up in the garden this month????? As with everyone from whom I've heard, my trees are loaded with a bumper crop of fruit and I am busily harvesting strawberries, blueberries, raspberries and Pakastani mulberries. I developed a very tasty blueberry muffin recipe which I will share. My huckleberries are thriving in deep shade and are producing heavily in 1-gallon pots. Can't wait to see what they'll do in the ground under my towering redwood tree. I decided to clear out most of my current planting under the redwood which include *Lamium*, *Camelias*, and *Rhamnus* and bring in plants that naturally grow in the redwood habitat such as sweet woodruff, native ferns, huckleberries, wild ginger (*Asarum*) and *Vancouveria hexandra*.

I am taking out the last of my cherry trees, as Craig's Crimson, which I thought might work out, only bore 5 cherries this year after being in the ground for 8 years. I planted 12 of my 15 tomatoes in the orchard as I pretty well have run out of "clean" ground in my vegetable garden. By next year I can rotate them back in. Remember to apply wettable sulfur to the tomato plants if you suspect you've had tomato russet mite problems in the recent past. How would you know that? If the foliage on the bottom of the plants turns yellow and then brown and crisp and it progresses upwards in the plant and the older stems take on a bronzed appearance – you've probably got the invisible mite. The cure is a COMPLETE coverage of wettable sulfur applied with a pump-up sprayer when temps are below 90 degrees. Sulfur is phytotoxic above that temperature. For further info check out the UC IPM for more details at:

<http://www.ipm.ucdavis.edu/PMG/r783400111.html>.



For the latest information on the light brown apple moth: Call the UCCE Master Gardeners at 408 282-3105 or visit: [http://www.cdfa.ca.gov/phpps/dep/lbam\\_main.htm](http://www.cdfa.ca.gov/phpps/dep/lbam_main.htm)

The first detection of light brown apple moth in the Bay Area came on February 27, 2007. Since then, nearly 150 have been detected in the communities of Palo Alto, Los Altos, San Rafael, Sausalito, San Francisco, Alameda, Berkeley, Albany, El Cerrito and Richmond. Trapping and surveying will continue in the area to learn the parameters of the infestation. Once that is established, a quarantine will be proposed. For now 1.5 miles within a detection area should be considered a quarantine area.

Major domestic hosts of concern are stone fruit (peaches, plums, nectarines, cherries and apricots), apples, pears, grapes and citrus. The pest destroys, stunts or deforms young seedlings; spoils the appearance of ornamental plants; and injures deciduous fruit-tree crops, citrus and grapes.

## Remarkable Kazak Apples

Their resistance to disease may boost an entire industry

Luis Pons, Agricultural Research Service Information Staff

Horticulturist Phil Forsline steps from his pickup truck on a cool spring morning, mulling where to start his day's work. "Let's see, that's Kazakhstan over to the right," he says. "To the left, that's China. "We'll start in Kazakhstan and work our way over."

Though said tongue-in-cheek, it's still a sweeping statement. After all, thousands of miles separate the Kazak nation, which spreads away from the Caspian sea's northeastern shores, and Sichuan, the Chinese province near the Himalayas as Forsline just described.

In actuality, Forsline stands on a dirt road bisecting apple orchards north of the Finger Lakes community of Geneva, New York. But the studies he and colleagues are bringing to a climax bridge not only far-apart Asian regions, but places in time as well.

Forsline is curator of ARS's Plant Genetic Resources Unit (PGRU), located on Cornell University's Geneva campus. And the genetic makeup of the trees he attends to may revolutionize the nation's—and perhaps the world's—apple industry.

These trees come from seeds and grafts Forsline and other researchers collected mostly during the 1990s in central Asia and Europe. Their material was gathered during seven expeditions sponsored by USDA and the U.S. National Plant Germplasm System aimed at expanding the known genetic diversity of apples.

### Tapping the Apple's Ancestral Home

Back in his office, Forsline explains that central Asia—Kazakhstan and Kyrgyzstan in particular—is likely the ancestral home of familiar domestic apples (*Malus x domestica*) such as Red Delicious, Golden Delicious, and McIntosh. "We tapped millions of years of adaptations to improve today's apple," he says.

Forsline went on seven of the trips, including four to central Asia, to collect apple material, conserve it, and, after evaluation, distribute it to breeders and geneticists worldwide. Other trips were to Sichuan, Russian, and Turkish sectors of the Caucasus region, and Germany. He recalls the expeditions as hard work. Often, the only way of getting to remote mountain areas was by helicopter, long hikes, or half-day-long jeep rides down bumpy, dusty roads.

"What we collected made possible our re-creation of Kazakhstan and China here in Geneva," he says. "All that effort is now bearing fruit, literally and scientifically."

He says the trips resulted in "at least a doubling of the known genetic diversity of apples. It turns out that this gene pool is much more diverse than we had originally thought. And what we've found may help make the trees stand up better to diseases."

Among all this material, it is the Kazak samples that have become the apple of Forsline's eye, so to speak. Especially noteworthy are accessions collected there of *M. sieversii*, an important forerunner of the domestic apple.

In all, the scientists returned from central Asia with 949 apple tree accessions. Most of the specimens were brought here as seed, but 50 were cataloged as "elite clones"—grafts of the original trees.

### Widening a Narrow Base

"Silk Road traders and their predecessors started the spread of apples from there to other parts of the world," he says. "But the seeds they carried likely represented a narrow genetic sampling. That's probably why today's American domestic apples have a fairly narrow genetic base that makes them susceptible to many diseases."

Forsline says that many of the Kazak apples lack the size and flavor needed for commercial success.

## Kazak Apples

cont. from page 3

"But it's the trees' ability to resist diseases that sets them apart. Breeders will be able to cross them with palatable varieties."

The curator and colleagues from PGRU and other institutions—the main collaborators include ARS plant geneticist Gennaro Fazio and Cornell University plant pathologist Herb Aldwinckle—are paying particular attention to the trees' germplasm and rootstocks.

"Germplasm" refers to the genetic material that carries the inherited characteristics of an organism. "Rootstocks" are plants with desirable root traits that are used as support root systems for fruiting cultivar grafts.

### Success Against Plant Diseases

Forsline says the Kazak trees showed significant resistance to apple scab, the most important fungal disease of apples, whose outbreaks blemish fruit and defoliate trees. "Twenty-seven percent of the Kazak accessions were resistant to it," he says. "This makes sense, because the tree co-evolved with the disease, through natural selection."

In addition, he led a project in which the popular Gala apple variety was crossbred with seven Kazak accessions. "This produced 7 populations of 250 seedlings each," he says. "In one of these populations, we achieved a 67-percent resistance rate against apple scab."

Forsline says this study, which involved scientists from Cornell and the University of Minnesota, as well as collaborators from New Zealand and South Africa, "may be the source of a more durable, scab-resistant apple."

"Also, about 30 percent of samples inoculated with fire blight resisted that disease," he adds. Fire blight destroys apples, pears, and some woody ornamentals in the *Rosaceae* family.

And researchers have found genes in these apples that allow them to adapt to mountainous, near-desert, and cold and dry regions.

Samples from species collected in other expedition sites have provided promising news in the fight against fire blight. Aldwinckle reports that seedlings from different populations of *M. orientalis* from the Russian Caucasus and Sichuan regions effectively resisted the disease, with Russian accessions scoring 50- to 93-percent resistance.

### Rootstocks, Too

"Russian *M. orientalis* may convey resistance to fire blight and less sensitivity to latent viruses than small-fruited *Malus species*," says Aldwinckle. "This would be especially useful for breeding fire blight-resistant rootstocks."

And it is in rootstocks that Fazio, director of PGRU's apple rootstock breeding project, also sees great potential—especially with crosses between Kazak apples and elite American material. "This is the future of the apple industry," he says. "Give it 5 to 7 years."

Walking through greenhouses at Geneva devoted to rootstock studies, Fazio says that natural selection that occurs in the central Asian forests seems to have helped the Kazak trees develop resistance to soil pathogens that can otherwise stunt young apple orchards and lead to poor growth and lost production. He says this material is "a treasure trove" of new genetic variants for resistance to *Phytophthora cactorum*, which causes collar rot, and *Rhizoctonia solani*, an agent of apple replant disease.

The progeny of two of the Kazak trees have stood up particularly well to disease. "We put them through what we call 'The Gauntlet,'" Fazio says, referring to exposure in the greenhouse to a series of pathogens that include fire blight and *Phytophthora*. "It usually kills 70 to 80 percent of seedlings. The first hint I had that this material was special was when I got 70 to 80 percent survival rates."



*A grafted tree produced in Geneva, New York, from a scion taken from a tree in a Kazakh apple forest. William Srmack, farm manager at Geneva, displays the quality fruit of this genotype that has potential use by breeders. (D350-1)*

Fazio sent rootstock samples to plant pathologist Mark Mazzola of ARS's Tree Fruit Research Laboratory in Wenatchee, Washington. Mazzola, who specializes in soilborne diseases of apples, tested it for resistance to *R. solani* and found it to be significantly more resistant than all the controls he was using.

"The reduction in root mass due to infection was 30 percent, compared to 70 percent for the controls," says Fazio. "We are considering seeking the inheritance of this resistance by following it—and the genes causing it—in the progenies of these plants. This step will take us closer to cloning and isolating genes responsible for this resistance." Fazio says that these seedlings have already become part of PGRU's rootstock-breeding program. "With the aid of marker-assisted selection, they will become the resistant rootstocks of the future," he adds. "Also, root tissue from the survivors of the Phytophthora inoculation has been used to create a cDNA library that will be sequenced as part of an ongoing National Science Foundation Expressed Sequence Tag project. The goal is to find the genes that are expressed only in resistant individuals."

Forsline, meanwhile, realizes the importance of his new role within this project. "The work is here now—in and close to the lab," he says. "It is more productive to be here and help spread the word about these apples than to be traveling on the other side of the world."

He says a goal now is to release germplasm lines from the collected materials within 5 years. "These collections are now being offered to breeders to develop diverse and useful hybrids for fruit, ornamental, and rootstock value."

*This research is part of Plant, Microbial, and Insect Genetic Research, Genomics, and Genetic Improvement, an ARS National Program (#301) described on the World Wide Web at [www.nps.ars.usda.gov](http://www.nps.ars.usda.gov). Philip L. Forsline and Gennaro Fazio are in the USDA-ARS Plant Genetic Resources Unit, Cornell University, Collier Dr., Geneva, NY 14456; phone (315) 787-2390 [Forsline], (315) 787-2480 [Fazio]; fax (315) 787-2339 [Forsline], (315) 787-2216 [Fazio]. "Remarkable Kazak Apples" was published in the January 2006 issue of Agricultural Research magazine.*

## Events

### Andy's Orchard

[www.andysorchard.com](http://www.andysorchard.com)

Store: (408) 782-7600 and ask for Lorene

1615 Half Road, Morgan Hill

Store Hours:

10:00am - 5:00pm Weekdays and 10:00am - 4:00pm Weekends

The farm stand features fruits grown in our own orchard. Dried Fruit Packs. We specialize in fruits that are tree-ripened and offer a tremendous selection of stone fruits with many varieties of cherries, apricots, peaches, nectarines, plums, and plumcots, even some that are especially rare and difficult to find.

Coming events:

Sunday, June 17th, 10am, Father's Day Special (Sweet Cherries plus tour)

Saturday, June 23rd, 10am, Fruit Tasting, Orchard Tour and possible Harvest Walk (Cherries and early stone fruits)

### UCCE Master Gardeners of Santa Clara County Classes

#### Espaliered Fruit Trees for the Home Garden

**Saturday June 16, 2007; 10 am to Noon**

MetroED World Garden at Erikson School

4849 Pearl Avenue, **San Jose**; Southwestern edge of campus in Room 18

Learn how to train, prune and maintain espaliered fruit trees, including which types of trees espalier best, different forms of espalier, and training espalier from a whip at this free workshop.

To register, contact [ritab@metroed.net](mailto:ritab@metroed.net) or call our MetroED/Erikson office at 408-723-6450 and ask to sign up for our June workshop.

**For more information call (408) 282-3105**

**Monday – Friday 9:30am – 12:30pm**

# Fruit Slices

## **Original Blueberry Cornmeal Bran Muffin Recipe Nancy Garrison**

1 cup whole wheat flour  
1/2 cup oat bran  
1/2 cup cornmeal  
1/2 cup unbleached white flour  
1 teaspoon baking soda  
1 1/2 teaspoon baking powder  
1 cup sugar  
1/2 teaspoon salt  
1 1/2 cup blueberries  
2 cups buttermilk  
2 eggs  
1/2 cup melted butter and cooled slightly  
Juice and rind of 1 lemon

Preheat oven to 375 degrees. Sift dry ingredients together. Add in wet stuff, stirring just until moistened and fold in blueberries.

Fill cups 2/3 and bake 30 minutes or until done.

## **Swanton Ranch U-pick Strawberries & Olallieberries**

(831) 469-8804. The 2007 olallieberry season has begun and will run until Sunday, July 30th. The U-Pick field is open from 9am to 5pm, Monday -Sunday. The olallieberries are located at 640 Cabrillo Highway. We've been farming olallieberries using organic methods since December 2003. Certified organic in 2007. Olallieberries cost \$2.00 per pound.

## **Novakovich Orchards**

14251 Fruitvale Ave, Saratoga 95070

<http://www.novakovichorchards.com>

(408) 867-3131

Open Sunday - Friday, 9am - 5pm

Apricots, pears and peaches.

Our new items are Autumn Blend and Arctic Frost.

## **J & P Farm & Fruit Stand**

4977 Carter Avenue San Jose 95118

(408) 264-3497

Open 9am to dark.

25 varieties peaches and lots more.

Phil Cosentino, owner, was our CRFG speaker a few years ago.

Phil will give tours of the orchard by appointment. A very popular fruit stand.

CRFG-Santa Clara Valley Chapter  
9140 Paseo Tranquillo  
Gilroy, CA 95020

## Membership Information Address Change Notification

For information on chapter membership, notification of address and phone number changes, please contact:

Sarah Sherfy  
9140 Paseo Tranquillo  
Gilroy, CA 95020  
408 846-5373

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	Brenda Frox-Grugett	408 730-5145

## 2007 COMMITTEE CHAIRS

Programs	Nancy Garrison	408-298-5828
	<a href="mailto:nancyg2@aol.com">nancyg2@aol.com</a>	
Program Co-chair	Jack & Susan Kay	408 -735-7376
	<a href="mailto:Kay639@yahoo.com">Kay639@yahoo.com</a>	
Membership	Sarah Sherfy	408-846-5373
	<a href="mailto:sherfy@gmail.com">sherfy@gmail.com</a>	
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