

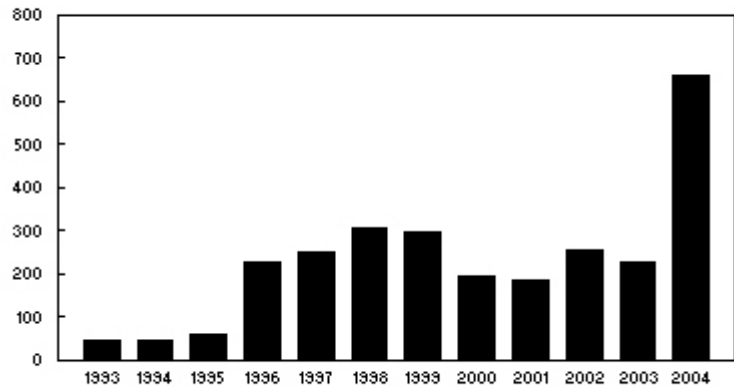
# 2004 CALIFORNIA ANNUAL REPORT TO THE W-6 TECHNICAL COMMITTEE

by Dan E. Parfitt  
June 20, 2005

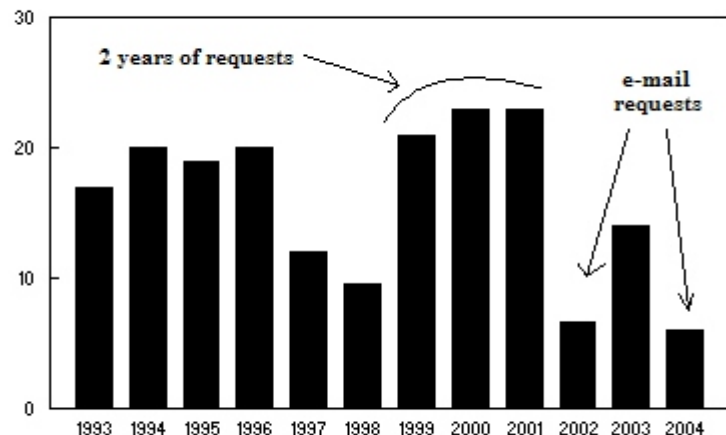
Approximately 660 requests for plant introductions from California users were filled by the Regional Plant Introduction Stations in 2004. Figure 1 shows the usage of germplasm in California from the National Plant Germplasm System expressed by the number of requesters for California from 1993 to the present. The request level for this year was therefore much higher than I have seen in the past. This is due primarily to the fact that about 1/2 of the requests were for pomegranates from small growers or home gardeners. Typically these high request levels occur when an unusual fruit or cultivar is featured in the popular press (e.g. Sunset magazine).

Collection of germplasm information: The collection methodology was somewhat different than used last year. As was true last year, the PI. station provided preprinted address labels. However, unlike last year, I did not have regional research funds to use for mailing, secretarial funds, etc. Therefore, to the extent possible, the requests were sent via e-mail. Because the electronic lists included information on what people obtained, I was able to merge that information into the letter, which helped recipients with their responses. Requestors that did not have e-mail were queried by regular mail. However, because of the large number of requesters that obtained only pomegranates, I only contacted pomegranate recipients that had e-mail addresses. 37 responses were obtained by e-mail and 5 by mail for a total of 42 responses (6.4%) for the year 2004. A considerable number of e-mail requests (73) were blocked, either by spam filters or due to changes in recipient e-mail addresses, and a half dozen out of office autoresponses were received. While the percentage of responses was low, the

**Figure 1: Requests for NPGS germplasm from California.**



**Figure 2: % of responses**



number of responses was about the same as last year.

The distributed germplasm was used in a wide variety of applications, from basic research to home gardening. This year a large number of distributions were pomegranate. These were primarily used by amateur growers. Capsicums are used by both amateur growers and professional breeders, while most of the vegetable and seed distributions are used in professional breeding programs. One of the more interesting uses of germplasm is provided by C.T. Kennedy (see below). A summary of the replies is provided below to show the nature of germplasm use.

The Viticulture Department at UC Davis continues to maintain grape collections for teaching and research. The Pomology Department at UC Davis has been merged into a larger Plant Sciences Department (with Agronomy, Environmental Horticulture, and Vegetable Crops) and the future status of the stone fruit, persimmon, pistachio, and walnut collections cannot be predicted at the present time. There does not appear to be an official process for supporting these collections at the present time, which is a departure from the situation in the former Pomology Department. The Department of Botany and Plant Science at UC Riverside maintains several collections of *Citrus* germplasm for cultivar evaluation and disease related research, as well as collections of avocado, cherimoya, and persimmon.. The California Genetic Resource Conservation Program is also located at UC Davis. This unique program, supported by the State of California, supports plant and animal germplasm conservation efforts within California. A report from the California Genetic Resource Conservation Program is included as Appendix 2.

### Summary Table of Responses

Respondent	PI number	Crop	Notes
Terry Berke - Woodland CA		Capsicums	I use a lot of the USDA materials in my breeding program, received over the last 20 years
	PI260438	C. chinense	green to red, very early
	PI159236	C. chinense	green to brown, source of TSWV resistance
	PI439437	C. chinense	
	PI593572	C. annuum	dark green to green
	PI439413	C. chacoense	possible source of new cytoplasm for CMS
	PI438535	C. chinense	green to yellow, early
	PI201234	C. annuum	source of Phytophthora resistance
	PI322719	C. annuum	source of nematode resistance
PI632919	C. annuum	source of nematode resistance	
Dr. Michael J. Striem Bakersfield CA	DVIT0358	Black Kishmish - Vitis	Cutting,2003,There is doubt if it is correct
Hsing-hsiung Hung, Glenn CA.	PI 190198	'Blue Rose'	Plant height = 151 cm, 50% heading date: 97 days, pubescent, medium kernel, tip abortion on panicle
	OR02AR SD	rice	
	PI388437	'Dozan 49' rice	Plant height = 109 cm, 50% heading date = 89 days, pubescent, medium kernel, sturdy straw, panicle prominent.
	OR85AR SD		

## **Narratives from recipients concerning germplasm observations and the value of NPGS.**

### **1. Bob Ferrari, Pacifica CA:**

*Punica granatum*: Two starts out of three took. Good growth the first season, at this time both starts have good thick health growth. with new growth on all off shoots. They are about 18 inches in height. They are in a large black nursery planter to allow good soil warmth. They most likely have rooted but will separate when they become dormant in fall/winter

### **2 Barbara Ghazarian, Monterey CA:**

Last fall, 2004, I received 3 *Cydonia oblonga* seedlings through Joseph Postman's generosity. Two of the seedlings are potted and doing well here on the Monterey peninsula. The third landed in Newport, Rhode Island. It's potted and not showing much sign of life--no leaves or buds--but I'm not giving up on it yet since this New England spring has been one of the coldest on record. I will keep you informed of the seedling's progress. Thank you for the opportunity to participate in this program. I'm hoping for fruit in a few years!

### **3. Fred Baron, Garberville CA**

You sent 4 sets of 3 each of different varieties of pomegranates one year ago. They have tripled in size and are very healthy with multiple branches having developed. I would be very happy to receive any other type stock that you wish to supply.

### **4. Betts,**

*Punica granatum*: Yes, I received three each of *Punica* "Wonderful", "Crab" and "Ink". I was running late, but luckily we had a wet winter. I just had time to plunk three each into three little circles in the veg. garden out back, trench them and make sure they stayed wet. As of today, 2 Wonderful are healthy with ca. 6" branches; same with Crab. "Ink" had to struggle harder, one survived with short new branches until day before yesterday, when significant other stomped on it.

### **5. Curtis Carmen**

*Punica granatum*: I have had success with all three of the plants in the package. They survived the summer in one giant pot and need to be replanted.

### **6. Cheryl Covert, Foundation Plant Material Service, UC Davis**

On the recommendation of the UC Office of Technology Transfer (OTT), FPS discards UC-patented strawberry cultivars that are off patent and no longer of commercial importance in California after depositing germplasm at the Corvallis Repository. In the course of developing DNA ID testing protocols as a quality control measure for the OTT/FPS program (in response to a suspected varietal mixup), FPS wanted to develop DNA profiles of UC strawberry cultivars that had been previously discarded from the FPS collection. We were able to retrieve material of these cultivars from the Corvallis Repository, enabling us to determine whether or not any of the discarded cvs. had gotten mixed in with a cultivar still in commercial production. The ability to retrieve material of these discarded cultivars helped enable FPS to confirm which cultivar had been mixed with the newer cultivar, solving a big mystery for FPS and the strawberry nursery industry.

### **7. Cynthia Smith**

Our 2 *Punica granatum* bud wood specimens both leafed out last spring and have survived an entire year. They are still quite small however, and I still have them in containers.

### **8. Danika LeDuc, UC Berkeley, Dept. of Plant and Microbial Biology**

In 2004, I received the following germplasm from the National Plant Germplasm System:

1 *Astragalus bisulcatus*

1 *Astragalus cicer*

After some experimentation, I was able to get both species to germinate, although the germination rate remains low. From the literature, I learned that this is not unusual. Currently, the plants are growing, and I am attempting to propagate seed for further experiments. Eventually, I hope to isolate genes involved in the selenium hyper accumulation mechanism of *Astragalus bisulcatus* by comparing the following transcriptomes 1) selenate-treated *Astragalus bisulcatus* with selenate-treated *Astragalus cicer* and 2) selenate-treated *Astragalus bisulcatus* with control plants.

### **9. Elizabetta Vivoda, Davis CA**

*Cucumis* sp. and *Citrillus lanatus*: We are using the germplasm obtained from The National Germplasm System in our breeding program and specifically in breeding for nematode resistance.

### **10. Grace Chen, USDA, Albany CA**

It is my sincere pleasure to write this justification to support the National Plant Germplasm System for providing excellent

service to my research in California. Last year and previous years, I requested about 90 castor cultivars (*Ricinus communis* L.) and used them in my major projects. I have published research results and acknowledged the USDA NGRP for supplying castor germplasm.

### **11. Jay Dabbs, San Francisco CA**

The three pomegranate cuttings are all growing. One started a month before the second. But the third all planted in same large pot, took over three months after the first two.

### **12. J.H. Blanding, Brisbane CA**

After reading an article in the 12/06/03 SF Chronicle about pomegranates, I requested and received budwood from three varieties: Wonderful (n = 3), Elf (n = 3), and Parfianka (n = 1). I planted all seven twigs in containers in the spring of 2004 (in Brisbane, CA); by summer, one of each variety had leafed out. This spring, those same three twigs are flourishing, and the others are showing no signs of life

### **13. Jon Verdick**

May 14, 2005

Dear Mr. Parfitt,

Re: Fig Cuttings received from NPGS / UC Davis

I received cuttings in 2004, dormant and summer, and 2005, dormant.

2004 was my first year or seriously propagating fig cuttings, from a variety of sources. There is a serious lack of information, and particularly pictures, about figs. I wanted to grow some additional varieties that I would enjoy, but every nursery thinks that all the figs they sell are the greatest, and taste is somewhat subjective to begin with. So I set out to collect and try a whole host of varieties to determine which would be to my liking.

In the process of collecting information on the various varieties, I decided to collate as much of the information that I could find, and ended up putting it together on a website at <http://figs4fun.com>, so that other people could also use it. I now have about 60 varieties in ground, and will hopefully have another 50 varieties to plant out by next spring. I am hoping to have pictures of leaves and fruit from the in ground varieties this year, to add to the website, and to supplement that which is available from the UC Davis website. There will hopefully be an opportunity for some sort of a tasting session this season for members of my local chapter of California Rare Fruit Growers.

From the 2004 winter cuttings, I had about 30% success in rooting, and about 90% of the varieties were represented in the successful rootings. From the summer cuttings, only one cutting of Aked was successful. So far, the 2005 dormant cuttings have yielded a half dozen rooted cuttings, but most have not broken dormancy as of this writing. Some of the successes over the last two years have been with numbered varieties, which often have had little available information, so I hope to contribute to filling some that lack this season and next. This is a long term project which I hope will be of value to many people in this country. There was considerable interest in fig plants at our CRFG chapter sale last summer, but a shortage of propagated material beyond a few "standard" varieties (Black Mission, Flanders, Celeste and the like).

I have traded cuttings with a variety of people over the last two years, but the Davis collection, as part of the NPGS has certainly fulfilled a major part in the opportunity to try new varieties. Extra successful rooted cuttings, and cuttings taken this year from successful rootings last year have provided material for exchanging with other fig lovers within CRFG and other places, such as the fig forum on GardenWeb. Some of those second-generation cuttings will be sold at our CRFG chapter plant sale late this summer, which will go to helping defray costs of the educational work which CRFG performs. Other second-generation material will be offered for sale at the local Farmer's Market at very reasonable prices, so that other people can also enjoy this particular fruit.

It is my sincere hope and desire that additional material can be added to the collection and distributed. There are many European varieties which appear to be quite appealing. I completed the process for obtaining an import permit, but then the cost of local quarantine monitoring, etc, became prohibitive for a hobbyist such as myself: thus my hope that such varieties can be obtained for the NPGS and distributed from there.

I am certainly looking forward to sampling a whole new palette of figs this summer, many of which came from the NPGS collection at UC Davis.

Sincerely,  
Jon Verdick

**14. Carl Jones, UC Davis, Dept. of Plant Sciences**

The material requested was regenerated and used to isolate DNA and as parents for crosses. All the material is being used for investigations into the genetic regulation of Vitamin C content. These accessions represent a valuable tool to study ascorbic acid levels in tomato. Detailed observations will be made in relation to each accession.

**15. Jay Bancroft, USDA, Albany CA**

I used the *Amaranthus powellii* subsp. *bouchonii* in an aphid host-plant suitability study. I submitted the manuscript. The cotton aphid and green peach aphid did not survive well on the *Amaranthus*. Let me know if you would you like a reprint when it is eventually published.

**16. E. B. Landford**

Alas the pomegranate cuttings never "took" . I would like to try again another time though

**17. Jorge Dubcovsky, UC Davis, Dept. of Plant Sciences**

Materials received from the National Plant Germplasm System have been essential for the research performed in my laboratory.

The following four publications, including a full research article in *Science*, were possible by the use of materials provided by National Plant Germplasm System. I strongly support the National Plant Germplasm System. It provides essential genetic material for research in small grains.

**18. Kanti Rawal**

The *Psophocarpus* accessions have been planted in our trials in Mexico. Hopefully We will have some information in about 5 months. As you may know winged bean requires a lot of heat and it takes a while before they flower and fruit.

**19. Lee Ann Ray, Saratoga CA**

Dear Dr. Parfitt,

I am disappointed to tell you that the *Punica granatum* cutting which your department provided to me did not survive. It arrived in a healthy state and I wasted no time in preparing it for potting. I trimmed the original specimen into three pieces, each about 12" long, dipped the bottom 5" in a solution of rooting concentrate and placed them in sterile potting medium under a plastic dome to preserve humidity. Only one of the stems produced leaves, the other two did not. The survivor was very weak and within 3 months was too frail to consider transplanting. Within 5 months it had failed. I am sorry that I was not more successful with rooting this particular species. I have been an avid gardener for many years and have lost only a handful of rooting projects, this being one of them.

Although the cutting did not survive my efforts, I really support your germplasm program and hope that it is continued for future generations of plant material. I have not tried any other cuttings from your department, but keep the URL address as one of my gardening resources.

Regards,

Lee Ann Ray  
Saratoga, CA

**20. Lucelle Hoefnagels**

Dr. Parfitt:

This is in response to your request for information about the *Punica granatum* that was sent to me. All three specimens grew rapidly in their pots. This year, I planted them in the ground, and all three continue to grow, with lots of side branches. There is no sign of disease, nor of insects bothering them. To date, they have not yet bloomed. Thank you for having given me this opportunity to participate in this program.

Sincerely,

Lucelle Hoefnagels.

**21. Max Werner**

We placed three of the pomegranates in the ground in Berkeley about a month ago. They appear to have taken and are leafing out well. Two were planted in Alamo, where we expect a more suitable climate. Those are already thriving better, it appears.

One shoot of the six we received never survived. We'll of course keep you updated as the plants develop further. Currently they are still quite small and just getting going. We will probably let them develop naturally into bushes, rather than training them into trees.

**22. Themis Michailides, Univ. of California, Kearney Ag. Center**

Yes, we obtained some germplasm to do some budding, but not of the graftings were successful. The first time most of the buds had flowering buds, and we cannot do grafting the second time it was the wrong time, so no success in budding. We may try this again in the future. So, we do not have any publications with the material obtained and used.

**23. Nicole Novak**

I did indeed receive the 3 *Punica granatum* and dutifully planted them per the instructions. Two of the budwood stems have just barely sent out tiny buds but no roots yet, and the third expired over the winter.

**24. Oswaldo Ochoa**

Dr Parfitt:

I am responding to your email from May 11, 2005 in regard to germplasm we received from Pullman. This request is a combination of use. Primarily we are screening for resistance to *Verticillium dahliae* in lettuce. Second we are using some of these accessions in NSF funded program to study: Evolutionary Genomics of the Compositae

I will be sending the whole set that we used for this experiments that are still in progress. However I was concern about the quality of the seed for some of the accessions. In fact many of them were reported in the envelope that they have low germ. or zero. We planted and they were right some were very low in germ, others very poor and others "zero" germination.

I am attaching the list of the ones we are using for the verticillium screening.  
As soon I have the file completed I will send it to you,

Thank you,  
Oswald Ochoa

**25. Raymond Sheehy, Sacramento CA**

Dear Dr Parfait,

The California Rare Fruit Growers in Northern California obtains budwood from the USDA each year to distribute it to the public at our scion wood exchanges throughout Northern California. These meetings result in educating the public on plant propagation, grafting and varieties of different fruit trees. We appreciate the cooperation the USDA has shown us through the years and hope to continue it for many more years to come. Again thank you for the opportunity to provide scion wood to our members and to the public.

Raymond Sheehy  
California Rare Fruit Growers Sacramento Chapter

**26. Robert E. Lee, Sherman Oaks CA**

I am so sorry to relate that upon returning home from Germany my entire stock of apple seedlings was lost in a greenhouse [plastic] rectangle that somehow caught a sudden rainstorm, filled with water and failed to drain...the seedlings rotted. <damn> I will now have to begin again-at least a three month wait...I cannot say enough how disappointed I am. However, my Germany trip produced yet further models for experimentation-and I never stop trying. For now, kindest regards,

Robert e Lee jr.  
So. California

**27. Roy Wiersma, Rancho Cucamonga CA**

Hi Dan,

A letter you sent me asked for feedback on the plant materials I have obtained from the National Plant Germplasm System. The letter indicated that I received 2 *Panicum virgatum*. This is a mistake. I obtained some Citrus budwood as indicated below. As always, I am glad to tell you how things worked out in my yard concerning these materials. It is my hope

that N.P.G.S. will continue to be available to home gardeners (i.e. rare fruit enthusiasts) and research scientists alike.

I obtained the following budwood (plant) in March 2004 from the USDA-ARS National Clonal Germplasm Repository for Citrus and Dates located in Riverside, CA:

1. *Citrus aurantium* 'Bouquet de Fleurs' (sour orange) PI 539174- I was given a small 1-gallon size tree since budwood was not available. It was planted directly in my yard and has flowered already. I had read that 'Bouquet de Fleurs' produces the best smelling flowers of any citrus (it smells nice but the best?). I was also curious to know whether the fruit of this tree is just sour (like a lemon) or bitter (like a grapefruit) or a combination of both. If it is just sour then I'll use it as I would a lemon (lemonade) or a lime (limeade) but in this case I'll make orangeade (as opposed to orange juice). I also downloaded a recipe off the Internet showing how to make bitter (sour) orange ice cream (Nigella Lawson). So we will see how it turns out.
  2. *Citrus sinensis* 'Fukumoto' (navel orange) PI 539577- I believe some types of 'Fukumoto' produce sectoral chimeras where the peel is of different colors. I was told this clone does not do that but maybe a sport will develop out of it that will. I grafted the buds onto a 'Valencia' (strain unknown) orange. The buds sprouted and the new shoots are doing well.
  3. *Citrus limettioides* 'Mary Ellen' (sweet lime) PI N/A CRC 4053- This is an oddball lime said to be "sweet" (low acid) so I am anxious to see how it turns out. I budded this onto a 'Eureka' lemon. Oddly, the buds produced flowers instead of shoots but no fruit set so it will need some time to grow shoots.
  4. *Citrus aurantiifolia* 'Mexican Lime' (lime) PI 539151- This lime is said to produce limes that are of superior aroma and flavor than that of the other lime commonly grown in California: 'Bears.' I grafted it multiple times onto a 'Eureka' lemon but none of the grafts (buds) took. Is there an incompatibility problem grafting 'Mexican Lime' onto 'Eureka' lemon or was it just bad luck? Since I couldn't get it to work I found a source in Vista, CA who had a 'Mexican Thornless Lime' even though I would have preferred a graft over another tree due to space limitations.
  5. *Citrus pyriformis* 'Ponderosa' (lemon hybrid) PI 539491- The lemons produced by this variety are huge. I grafted it onto the same 'Eureka' lemon tree mentioned above but none of the buds took even after multiple attempts. Again, I ask, is there an incompatibility issue between 'Ponderosa' and 'Eureka' or just bad luck?
  6. *Citrus limon* 'Variegated Pink Eureka' (lemon) PI 539315- This lemon has beautiful ornamental features about it that make it fun to have in the yard. The grafts that I made originally appeared to take (on 'Eureka' lemon) but were later wiped out by a heat wave.
  7. *Citrus sinensis* 'Variegated Cara Cara' (navel orange) PI N/A CRC N/A- This navel orange is already famous for its uniquely colored reddish flesh and distinct and pleasant flavor. This variegated form is even more striking in that the leaves are variegated. I grafted this onto a 'Valencia' (strain unknown) orange and it is doing well.
- There were several other Citrus types that I had requested but were not yet available (i.e. 'Variegated Valencia' sweet orange, Australian finger lime, 'Variegated Eureka' lemon, etc.). Hopefully in the near future, these will be certified for release.

Report on past N.P.G.S. materials:

I had received two types of grapes from the Davis, CA branch of the USDA National Clonal Germplasm Repository in February 2002. They are *Vitis vinifera* 'Syrian' (DVIT2162) and *Vitis vinifera* 'Sultanina Marble' (DVIT0529). Both have done extremely well in Alta Loma (Rancho Cucamonga), CA. The 'Syrian' has a rather tough skin but when ripe its flavor is like a Sweet Tart candy where part of the grape is sweet and part is tart in a pleasing combination. The 'Syrian' grape is also rather large in comparison to the other 20 or so grape cultivars that I grow (both table and wine types). The cuttings that I received had a purplish cast to them when wet (were they sprayed with something?) but those cuttings of the 'Sultanina Marble' that arrived in the same shipment did not have this purplish color. 'Syrian' is believed to be the grape mentioned in the Bible in Numbers 13:23-24 since it is said to be native to the Hebron area of Israel (West Bank?).

The 'Sultanina Marble' is a de facto variegated 'Thompson Seedless' grape. This is a very beautiful vine with variable variegation in the leaves as well as in the grapes (but close to harvest time it is hard to see the variegation any longer in the fruit). It tastes great and has no seeds.

I had received some corn seeds in 1999 (I think): PI 553056 (and two others). In the summer of 2000 I crossed PI 553056 (as the male) with a strain of rainbow colored (leaves) corn (as the female) from Cheryl Harris of Luther Burbank Home and Gardens. The objective was to produce a stunning rainbow leaved corn. The resulting seed (21 "good" seeds) was planted in the summer of 2001 (only 8 (maybe only 7 due to an herbivory caused resprout) plants survived) and allowed to "self." The resulting seed was harvested in December 2001. As I write this I realize that its been 4 years since I last worked on this project so I will make it a priority to get at least some of that seed planted for evaluation this summer (2005).

Multi-colored vegetables appear to be a trend in home gardening lately: multicolored Swiss chard; green, orange,

and white cauliflower; red, yellow, white, and orange carrots are available in seed catalogues. I have noticed 'Quadricolor' (colorful leaves) corn and *Zea mays japonica* (also colorful leaves) also in seed catalogs.

Sincerely,  
Roy Wiersma

Member of the American Society of Plant Biologists  
Member of the American Bamboo Society  
Member of California Rare Fruit Growers, Inc.

#### **28. Randy Cheek**

*Punica granatum*: 2004 was my first time receiving germplasm from UC Davis.  
Observations: The germplasms were potted in six inch pots filled with potting mix. After one year I planted them. The plants have been in the ground for about four months and seem to be thriving. They vary in size from 12 to 18 inches

#### **29. Robert Silverstein**

*Punica granatum*: Unfortunately, the cuttings never developed roots.

#### **30. Ross Tinline, San Carlos CA**

Received 3 *Punica granatum*

Two developed robust side branch and leaf development with some branches appearing like water sprouts. One has not developed branches and the one shoot that started, subsequently died. The lenticular leaves are generally healthy looking though some have some spot development or fine dendritic patterns. Total height of the two is approximately 14- inches and are still together in large pot in mostly full sun on our deck. If there's a form that you'd like me to fill out, please resend. Thanks so much

#### **31. Sandy Gainza Fairfield CA**

I received three pieces of wood for three varieties of *Punica Granatum* in 2/2/2004. The accession numbers are:

DPUN0008 Haku-taka

DPUN0081 Wonderful

DPUN0085 Crab

I planted them in 5 gallon containers and they are still there. I am not sure what to do next, as this is my first time growing something from a piece of budwood. The best are the three Crab, each is about 12-18 inches tall and competing for the barrel there as you can see. The good Haku-taka has flowers and is about 18 inches tall. I will be happy to provide any data you need, but would also love to know what to do now with them. It has been fun to grow them so far. Thank you.

#### **32. C.T. Kennedy, San Francisco CA**

*Malus* unknown PI., former Geneva GMAL 1101.01 'Ashworth Old McIntosh'.

Obtained 1994, deaccessioned from Geneva collection because duplicate and virus infected. Grafted on EM106, makes a true dwarf (to 3ft. In 10 years) apple tree of normal form and reduced vigor, with fair productivity of type y. Macintosh fruits. Suitable for pot culture without awkward upright form of columnar derivatives of Wijeik McIntosh.

*Malus* material received from Geneva in 2004 was propagated for orchard restoration project at Filoli, a property of the National Trust for Historic Preservation, chartered by Act of Congress. Historic orchard requires replanting with authentic period cultivars not available through commercial channels. The adult trees will support various fruit related interpretive programs in future years.

#### **33. Paul Thomas Woodland CA**

Der Dr. Parfait,

In regards to your letter of May 12, 2005 inquiring into results of several tomato germplasms I received from the National Plant Germplasm System in 2004, I wish to inform you that the various wild species they sent to me were not planted. I had requested several orange fruited lines of *esculentum* and I received the orange fruited wild species which I could not use. The two samples of *L. esculentum* which I did receive were historical varieties which I wanted to increase for



my seed bank to be used in possible crossing program. I believe they were 'Manapal' and 'Manaluie'.

I very much appreciate the assistance the NPGS has given me over the years whenever I felt the need of their services. They have always been most kind.

Sincerely yours,  
Paul Thomas

#### **34. Duane Wieden, Redding CA**

To: Dan Parfait

June 8 , 2005

From: Duane Wieden

RE: Response as requested for cuttings received from National Plant Germplasm System

Dr. Parfait, I apologize for the lateness of my response. I hope that the information provided is still pertinent and useful. Unfortunately, I have been down for almost a week with a flu sporting an average of a 102 degree .F fever and full flu symptoms. To say the least, it hasn't been any fun.

Unfortunately, none of the cuttings I have received in 2004 are old enough to yield fruit. Also, most of my 2003 fig cuttings have fruited negligibly due to age, and the fruiting was late enough to be out of season and not give good indications as to the overall quality of the fruiting variety. However, I have found that the fig variety Excel will merit further review this season. Excel from current evaluation is an extremely dry white fig. While not having the flavor complexities of the Black Mission, it is naturally dry enough as produced by the tree to be considered a candidate for further evaluation as another option for a drying fig. The fig varieties Dauphine and Mary Lane have both been rejected as inferior. Dauphine, although producing a large fig, has a large open eye and is frequently soured inside (bad). This unpleasant occurrence is frequent and distasteful enough that Dauphine has been rejected and removed from our location. Mary Lane, while reputed to being a "seedless" or "jelly" fig, is not fully seedless. It also simply does not have the flavor qualities of any of the better figs. Thus it has been rejected.

In 2003 I had experienced 100% mortality from both grafting and rooting of persimmon cuttings. I discussed this with the USDA as I had seen (for lack of a better term) a light green mold on the outside of the persimmon cuttings I received in 2003. This past year, the cuttings that I received looked perfect and were devoid of any "green mold" I grafted these immediately, and had as much success as my grafting skills merited, but the cause of failure was not from the wood received. This year, everything pushed about a month and a-half early. I visited the Winters (Wolfskill) Germplasm repository in order to collect cuttings from both the USDA and Pomology collections that had not taken here. I found that most of the cuttings had already pushed green by the time I arrived to collect them. In my grafting experimentation with these late collected cuttings, although a significant portion of these late collected grafted cuttings pushed and looked as if they were going to take after having been grafted, indeed most all of these died back, leaving a success ratio that was extremely low. As such, my findings on persimmon cuttings is that cuttings harvested that have already come out of dormancy have only a minute percentage chance of success, whereas cuttings harvested at full dormancy have optimum chance for taking even if they have to "overwinter" slightly after having been grafted onto dormant rootstock Preliminarily (actual counts will confirm later), dormant budwood grafted onto compatible dormant rootstock appears to be the best method to graft persimmons, whereas the second most successful situation would be grafting dormant budwood onto pushing or already pushed rootstock (or onto existing field trees). Using non-dormant budwood is simply not a viable option for persimmons using whip grafting.

This past season, I have completed my survey of the Oriental Persimmons of both collections at Wolfskill for a book I am presently writing about the Oriental Persimmon in California. I had the unique opportunity in '2004 of finding much of the fruit in the UC Pomology collection at Wolfskill to be fully seeded (pollinated). This was especially important for my review of all Cinnamon Persimmon fruit there (PVNA). The results of my complete evaluations of all varieties will be made available when my book is published. This next year, I have to survey the collection at the place where I grew up - South Coast Field Station.

There are still some important issues of misnaming of some Oriental Persimmons in the USDA collection at Wolfskill. I will work with the USDA to attempt to correct these errors.

In the meantime, I have been asked by the California Rare Fruit Growers (CRFG) to lecture at their 10th annual meeting on the topic of the Oriental Persimmon, so the knowledge that I have acquired about the Oriental Persimmon (at least 45 minutes worth) will be spread around to fruit enthusiasts attending this event .

The same recommendation that I made this past year about charging a "reasonable fee" for those receiving cuttings still applies. I deem this a means of not only keeping this process alive, but to make it more available to those who do not know about it at present. When I asked Ed Stover PhD (the new Davis USDA Germplasm Repository Director) to present me with the way that he would like the germplasm listed in my persimmon book as a place where cuttings could be obtained, he refused, saying that this service was only supposed to be available to researchers and fruit breeders. not to the "general public". Although he suggested that I could include it on my own if I wanted to (without official sanction), I made it clear that I was not interested in taking this approach. and that if he didn't want this program listed to the general public, that I simply would not list the USDA as one of the sources for cuttings .in my book. This is a policy stance for this program that I was unaware of prior to this year that quite frankly surprised me, as I have watched the USDA manage this process off-and-on for several years now. Is it not reasonable to let this process become available for a fee to "the little guy" by employing a reasonable surcharge cost per cutting (or per order) to reduce the number of orders from those not seriously interested - at least to cover postage, and a reasonable handling fee, etc.? Anyway, such is my "two-cent" on this issue again - please refer to my detailed comments from last year on this matter, or I can include them again if requested.

Dr. Parfait, I look forward to working with both UC staff and the USDA this year and in years to come to further the knowledge of minor fruit crops and in time to make some of these superior cultivars available to the public at large.

Sincerely,

Duane Wieden

**35. Harlan Lundberg, Richdale CA**

Thank you for these selections (.Echinochloa sp., Setaria sp., Panicum, Linum). I have them in a selection nursery.

## Publications

1. Chen, Q. H., He, X., Liao, L. P. and McKeon, T. A. 2S Albumin Gene Expression in Castor Plant (*Ricinus communis*). *J. Am. Oil Chem. Soc.*, 81, 311-31. 2004.
2. Chen, Q. G., He, X. and McKeon, T. A. A Simple and Sensitive Assay for Distinguishing the Expression of Ricin and *Ricinus communis* Agglutinin Genes in Developing Castor Seed (*Ricinus communis* L.). *J. Agric Food Chem.*, 53, 2358-2361. 2005.
3. Graham E.B., A. Frary, J.J. Kang, C.M. Jones and R.G. Gardner, A recombinant inbred line mapping population derived from a *Lycopersicon esculentum* x *L. pimpinellifolium* cross. Report of the Tomato Genetics Cooperative, 2004 54:22-25.
4. Jones, C.M., P. Mes, and J.R. Myers, Characterization and inheritance of the Anthocyanin fruit (Aft) tomato. *Journal of Heredity*, 2003 94(6): p. 449-56.
5. Fu D, P. Szucs, L. Yan, M. Helguera, J. S. Skinner, P. Hayes P, and J. Dubcovsky. 2005. Large deletions in the first intron of the VRN-1 vernalization gene are associated with spring growth habit in barley and polyploid wheat. *Mol. Gen. Genomics*. 273: 54 - 65.
6. Dubcovsky, J., C.-L. Chen, and L. Yan. 2005. Molecular characterization of the allelic variation at the VRN-H2 vernalization locus in barley. *Mol Breeding*. In press.
7. Yan, L., M. Helguera, K. Kato, S. Fukuyama, J. Sherman, and J. Dubcovsky. 2004. Allelic variation at the VRN-1 promoter region in polyploid wheat. *Theoretical and Applied Genetics*. 109: 1677–1686
8. Yan, L., A. Loukoianov, A. Blechl, G. Tranquilli, W. Ramakrishna, P. SanMiguel, J.L. Bennetzen, V. Echenique, and J. Dubcovsky. 2004. The wheat VRN2 gene is a flowering repressor down-regulated by vernalization. *Science* 303:1640-1644

Appendix 1: Ochoa seed germination data:

Planting ID	Accession		Lactuca	Origin	Gemination %		USDA envelope
					Replications		
					A	B	
7	PI	491250	seriola	GR	0	0	0
8	PI	491249	seriola	GR	0	0	0
9	PI	491246	seriola	GR	0	0	0
10	PI	491245	seriola	GR	0	0	0
11	PI	491244	seriola	GR	0	0	0
12	PI	491234	seriola	GR	0	0	0
13	PI	491227	seriola	GR	0	0	0
30	PI	258816	seriola	SU	0	0	0
32	PI	491181	seriola	TK	0	0	0
40	PI	491165	seriola	TK	0	0	0
42	PI	491156	seriola	TK	0	0	0
47	PI	491143	seriola	TK	0	0	0
48	PI	491142	seriola	TK	0	0	0
49	PI	491140	seriola	TK	0	0	0
50	PI	491138	seriola	TK	0	0	0
51	PI	491116	seriola	TK	0	0	0
52	PI	491104	seriola	TK	0	0	0
56	PI	491173	seriola	TK	0	0	0
57	PI	491172	seriola	TK	0	0	0
44	PI	491150	seriola	TK	0	vp	0
81	PI	274375	virosa	PO	0	vp?	0
41	PI	491162	seriola	TK	0	0	5
53	PI	491102	seriola	TK	vp	100	5
46	PI	491147	seriola	TK	0	0	6
66	PI	274457	seriola	GY	vp?	vp	7
6	PI	289063	seriola	HG	vp	vp	7
55	PI	491174	seriola	TK	0	0	8
2	PI	491089	seriola	TK	vp	vp	8
45	PI	491148	seriola	TK	0	0	9
63	PI	273431	seriola	FR	vp	vp	9
79	PI	253229	saligna	TK	p	vp	9
5	PI	289064	seriola	HG	vp	vp	11
14	PI	491100	seriola	TK	vp	0	16
39	PI	204753	seriola	NT	vp	p	16
16	PI	491094	seriola	TK	0	0	22
4	PI	289065	seriola	HG	vp	vp	22
24	PI	273589	seriola	DN	vp	vp	27
23	PI	273596	seriola	GY	vp	vp	30
15	PI	491098	seriola	TK	0	0	41
54	PI	491101	seriola	TK	vp	vp	42
34	PI	190906	seriola	CZ	vp	vp	43
17	PI	491093	seriola	TK	vp	0	50
18	PI	491092	seriola	TK	vp	vp	53
28	PI	253468	seriola	YG	p	p	56
70	PI	273617	seriola	NT	p	100	64
31	PI	261654	seriola	NT	vp	vp	68
68	PI	274359	seriola	PO	100	100	76
73	PI	509523	saligna	GR	100	100	76
69	PI	274355	seriola	GY	100	100	77
78	PI	490999	saligna	TK	100	100	82
27	PI	251247	seriola	EG	p	p	82
80	PI	258813	saligna	SU	100	100	87
3	PI	419088	seriola	CH	vp	vp	91
22	W6	6327	seriola	RS	100	p	93

Appendix 1. Continued.

25	PI	251245	serriola	EG		p	p	93
26	PI	241246	serriola	EG		100	p	94
29	PI	255665	serriola	AF		100	100	95
38	W6	22610	serriola	IR		100	100	95
58	PI	491178	serriola	TK		100	p	95
74	PI	509524	saligna	GR		100	100	96
65	PI	274807	serriola	IN		p	p	97
76	PI	281876	saligna	IR		100	p	97
33	PI	202349	serriola	NT		100	100	98
64	PI	274898	serriola	NT		100	100	98
19	W6	22605	serriola	IR		100	100	100
20	W6	22604	serriola	IR		100	100	100
21	W6	22602	serriola	IR		100	100	100
37	W6	22611	serriola	IR		100	100	100
59	W6	22609	serriola	IR		p	100	100
60	W6	22608	serriola	IR		100	100	100
61	W6	22607	serriola	IR		100	100	100
67	PI	274372	serriola	RS		100	100	100
75	PI	281877	saligna	IR		100	100	100
62	W6	22606	serriola	IR		vp	p	100
77	PI	491000	saligna	TK		p	p	100
43	PI	491153	serriola	TK		100	p	?
82	PI	273597	virosa	GY		vp	vp	?
<hr/>								
P=poor								
p=very poor								
o=more than vp								
<hr/>								

## Appendix 2: 2004- 2005 Report from the California Genetic Resources Conservation Program

The University of California Genetic Resources Conservation Program (GRCP), with office on the Davis campus, continued to support plant germplasm collections and activities. A systemwide budget reduction in the 2003-04 fiscal year was continued in the current year, again limiting the GRCP small grants program in aid of imperiled California genetic resources collections. Still 31 awards were made in the 2004-05 fiscal year and 10 of these involved plant germplasm. Of these 10, one was on the Berkeley campus, six were on the Davis campus, two were on the Riverside campus, and one was on the Santa Cruz campus. GRCP continues to manage a small USDA fund for research in support of the germplasm holdings of the National Clonal Repository for Fruit and Nut Crops at Davis.

GRCP serves as managing office for a National Science Foundation-funded plant genomics research project involving a consortium of researchers (eight investigators at the University of California, three at other universities, and two at the USDA-ARS-WRRC in Albany CA. It is a three-year project and is in its second year. Its objective is the determination of the extent of haplotype variation in hexaploid wheat for production of single nucleotide polymorphisms for use as markers. As part of its management office activity for this project, GRCP has organized a 2005 undergraduate student internship program, recruiting 14 interns from around the country who will work for seven weeks in seven of the consortium labs.

GRCP has been involved with rice and wheat geneticists and breeders to establish a means of maintenance and distribution of genomic resources for these two crops. In the short term, under the auspices of a UC-USDA memorandum of understanding establishing a Wheat Genomics Center, distribution of both wheat and rice genomic resources is being carried out.

Three key documents relevant to plant genetic resources were released in this fiscal year. In November 2004, "Assessing Biodiversity and Sharing the Benefits: Lessons from Implementing the Convention on Biological Diversity" edited by Santiago Carrizosa, Stephen B. Brush, Brian D. Wright, and Patrick E. McGuire, and published by the World Conservation Union (IUCN) and GRCP was published. It is available in pdf format online (<http://www.grcp.ucdavis.edu/publications/docABSPacRim/ABSPacRimwww.pdf>). In December 2004, "Genetically Appropriate Choices for Plant Materials to Maintain Biological Diversity", authored by Deborah Rogers (GRCP Research Geneticist) and Arlee Montalvo (UC Riverside) was published by the US Forest Service, Rocky Mountain Region. It comprises some 300 pages of guidelines to genetic issues of conservation as well as a literature review on the status of genetic information for the Rocky Mountain flora. It is available in pdf format online (<http://www.fs.fed.us/r2/publications/botany/plantgenetics.pdf>). Finally, in February 2005. GRCP published "Safeguarding the Future of U.S. Agriculture: The Need to Conserve Threatened Collections of Crop Diversity Worldwide" by Calvin O. Qualset (GRCP) and Henry L. Shands (USDA-ARS). It is available in pdf format online (<http://www.grcp.ucdavis.edu/publications/SafeAgdex.htm>).