Topics in Subtropics Newsletter

University of California Cooperative Extension

Fresno, Kern, Madera, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara,Tulare,&Ventura Counties

News from the Subtropical Tree Crop Farm Advisors in California

Volume 4, No. 3
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Editor's Note:

Please let us know if your mailing address has changed, or you would like to add someone else to the mailing list. Call or e-mail the farm advisor in the county where you live. Phone numbers and e-mail addresses can be found in the right column.

Please also let us know if there are specific topics that you would like addressed in subtropical crop production. Copies of Topics in Subtropics may also be downloaded from the county Cooperative Extension websites of the Farm Advisors listed.

Craig Kallsen
Editor of this issue

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The Positive Points System for Citrus: What is it and Why Should a Grower Get Involved?

Beth Grafton-Cardwell
Dept. of Entomology, UC Riverside, stationed at the Kearney Agricultural Center and Director of Lindcove Research and Extension Center.

Overview of the Positive Points System (PPS) for Citrus: For the past 6 years, a group of University of California Extension Specialists, Farm Advisors, and citrus growers have been working together to develop a "Positive Points System for Citrus". The PPS for citrus is a set of 220 questions that cover topics in seven categories of citrus production (Table 1). These topics include horticulture, soils, water, pest management, post harvest issues, food safety and continuing education. The purpose of the PPS is to help growers determine their strengths and weakness in citrus production, to quantify the adoption of reduced risk practices used in California citrus and to document good agricultural practices. The citrus assessment was modeled after the PPS for Vineyards developed by the Central Coast Vineyard Team.

Table 1. Positive Points for Citrus Assessment Categories

Category	Total Possible Points
I. Horticultural Management A. Site Development B. Rootstock/Scion C. Canopy Management D. Plant Growth Regulators E. Frost Control	200
II. Soil Management A. Pre-plant Soil Structure Modification B. Post-plant Soil Structure Modification C. Erosion Control D. Soil Monitoring/Leaf Analysis/Amendments	140
III. Water and Nutrient Management A. Water Quality B. Off-site Water Movement C. Irrigation System Efficiency D. Irrigation Scheduling and Amount E. Fertilization/Fertigation/Plant Analysis	195
IV. Pest Management A. Insect/Mite/Snail/Nematode/Vertebrate Pest Control B. Natural Enemies C. Disease Control D. Weed Management E. Spray Efficiency and Efficacy	255
V. Post Harvest A. Harvesting B. Packinghouse C. Fruit for Export	155
VI. Food Safety A. Sanitary Standards B. Chemical Residues	65
VII. Continuing Education A. Grower B. Employee	90
Total Points	**1100**

Sample PPS questions: The questions in the PPS (see the sample set of questions in Table 2) ask the grower about his/her use of various horticultural practices or knowledge of citriculture in his/her orchard. For example, in Table 2, question 1 asks if the trees were propagated with registered budwood. This question is asking if a grower uses the management practice of planting with certified, registered budwood. Question 7 asks if the grower is aware that some rootstock and scion combinations are incompatible. This question is asking about the grower's knowledge of rootstocks and scions. If the grower says confidently that he uses a practice, or has knowledge of an aspect of citriculture, he gives himself 5 points. If he does not use that practice, or is not aware of the information described, then no points are assigned. The assessment is weighted towards practices that promote long-term health of the tree and marketability of the crop, reducing dependence on broad spectrum pesticides and protecting the environment and human health. The total number of points in each category reflects the level of adoption of these types of practices by the grower.

Table 2. I. HORTICULTURAL MANAGEMENT
B. ROOTSTOCK/SCION section

Goal: To select a rootstock and scion combination that maximizes tree vigor and fruit quality and reduces the need for chemicals to control pests and diseases.

5 pts		Questions
	1.	Are trees planted propagated with registered budwood?
	2.	Are disease and/or pest resistant rootstocks utilized?
	3.	Are you aware that resistant rootstocks provide long-term benefits in controlling citrus nematodes or Phytophthora even if the orchard was fumigated before planting?
	4.	Were the soil characteristics and prior planting history considered when rootstock(s) were chosen?
	5.	Did you consider matching the scion to your growing conditions?
	6.	Do you have a rootstock or scion trial on your site, or have you used information obtained from a similar site (other grower or U.C. trials) when making your rootstock choices?
	7.	Are you aware of the incompatibility of certain rootstock and scion combinations?
	8.	Are you aware that fruit quality is affected by certain rootstock and scion combinations?

The sample questions in Table 3 show that PPS questions address not only growing practices for citrus but also stewardship of a product that is safe for consumers.

Table 3. VI. FOOD SAFETY
A. CHEMICAL RESIDUES section

Goal: To ensure that chemical residues (pesticides, fertilizers) do not contaminate fruit.

5 pts		Questions
	1.	Do you know your reentry intervals (REI) and post harvest intervals (PHI) for pesticides to avoid pesticide residues and worker safety problems?
	2.	Does your packinghouse test the fruit from your orchard for pesticide residues after packing?
	3.	Do you know the limits on use of organic fertilizers?
	4.	Do you have an internal trace back system to match potential residue problems with specific orchards?
	5.	Are you aware that when there is a chemical residue problem, the contaminated fruit can be traced to you, and you are responsible?

Why should I, the grower complete a PPS for Citrus Assessment?

Direct Benefits for the Grower:

- The grower identifies areas of citrus management that need more attention. For example, if the grower finds that he has a low point accumulation in the area of soil management, he knows that this is an area that he should learn more about. The grower can take classes, or read books, or discuss the subject with experts.
- Growers learn about practices that they are unfamiliar with that can be used in their orchard. Growers who were helping us develop the PPS frequently discovered a citrus production practice in the list of questions that they had never heard of before. During that meeting, they were able to ask their Farm Advisor more details about that practice, chat with other growers, and consider adopting the practice in their orchard.
- Participation in the assessment provides documentation for various regulatory agencies that the grower is protecting ground water, air, and the environment. For example, the PPS questions that address irrigation management, sediments, nutrients and pesticides may be accepted by the Regional Water Quality Control Board as documentation of a farm plan.
- Participation in the assessment provides documentation for consumers and regulatory agencies that the grower is producing food that is safe from disease or chemical contamination. The PPS questions that address water quality, use of manures, pesticide use, post harvest handling of fruit, and employee training may be accepted as documentation of 'Good Agricultural Practices' (GAP).

Benefits for the Citrus Industry:

- Growers can demonstrate to the community and regulatory agencies that they are committed to sustainable, integrated citrus pest management practices. The Pest Management Section of the PPS evaluates grower utilization of soft pesticides, natural enemies, and cultural control practices for management of pests.
- Participation shows other growers that implementation of sustainable practices can be commercially successful. Some growers are hesitant to adopt new practices till they "see it work". If the results of the PPS show that a practice is widely used in a region, then a grower is more likely to adopt that practice. When groups of growers over a wide area adopt softer pesticide practices, natural enemies and other nonchemical methods of pest control are more likely to succeed.

Benefits for University of California Cooperative Extension:

- Participating University of California Cooperative Extension Personnel will be provided the results of the assessments for their region. Low scores in any category will alert them to subject areas that need educational programs. The results of the assessment could be used by UCCE personnel to request grant funds for developing a class, field day, video, web site, or publication for a particular subject.
- If the grower completes an assessment each year for a particular orchard then the PPS can document change in practices over time. For example, a grower may have a low point score in an area such as soil management. If he takes a course, or reads literature, or talks to his farm advisor and increases his knowledge and changes his practices, he is likely to have a higher point score the following year. These data can be used by Extension and research personnel to demonstrate that learning and change are taking place.

What does it cost to complete a PPS for Citrus Assessment?

There is no cost, other than your time, for being a "Participating Grower" who completes a PPS for Citrus assessment. It will take you 1.5-2 hours to complete each assessment and this should be done once a year. You may want to complete more than one assessment if you have different management practices in different orchards. While your score will be used to analyze trends, your name will never be published (all scores and their identities remain confidential). Therefore, you won't be comparing your score to anyone else's score. You will be using your score to compare practices used between your own orchards or to look at your knowledge and adoption of practices through time.

How do I complete the PPS for Citrus Assessment?

UCCE Farm Advisors will be hosting 6 grower meetings throughout the state of California during the fall and winter of 2006-07. During these meetings, growers will fill out a PPS assessment for one of their orchards. Extension personnel will be there to assist and 2 hours of continuing education credits can be earned by participating in the meeting. The information will be collected and tabulated and the individual results reported back to the grower. If you are interested in participating, please contact the nearest UCCE Farm Advisor. (Grower Meetings are listed on Page 5)

Grower Meetings

Fresno County: October 25, 2006. Mark Freeman hosting, Fresno County Cooperative Extension. Meeting Location: Kearney Ag Center, 9240 S. Riverbend Ave., Parlier, CA 93648. For more information call: (559) 456-7265

Kern County: January 10, 2007. Craig Kallsen hosting, Kern County Cooperative Extension, 1031 S. Mt. Vernon Ave. Bakersfield, CA 93307. For more information call: 661-868-6221

Tulare County: January 11, 2007. Neil O'Connell hosting, Tulare County Cooperative Extension, Tulare Ag Building, 4437 S. Laspina St., Suite B, Tulare, CA 93274. For more information call: 559-685-3309 ext 212.

San Luis Obispo County: to be announced. Mary Bianchi hosting. San Luis Obispo Cooperative Extension, 2156 Sierra Way, Suite C, San Luis Obispo CA, 93401 (805) 781-5949

San Diego/Riverside Counties: to be announced. Gary Bender and Peggy Mauk hosting, San Diego and Riverside County Cooperative Extension. Combined County Meeting location: Pala Casino Resort, 11154 Hwy 76, Pala CA. For more information call: Gary Bender (858) 694-2856 or Peggy Mauk (951) 683-6491.

Ventura County: January 17, 2007. Ben Faber hosting, Ventura County Cooperative Extension, 669 County Square Drive, Ventura, CA 93003. For more information call: (805) 645-1462

Getting Horseweed and Hairy Fleabane Back Under Control in Central California

Kurt Hembree, UCCE Farm Advisor, Fresno County

While both horseweed and hairy fleabane have been here since farming began in the region, it's only since about 2003 that they have become such an obvious problem, particularly in tree and vine systems and non-crop areas.

In the past, the traditional use of combinations of pre- and postemergence herbicides and/or cultivation was adequate to manage them. However, recent changes in environmental regulations, economics, herbicide use patterns (toward more postemergence-only programs), treatment timing, and glyphosate-resistant biotypes have all contributed to the problem. Other factors contributing to their spread include, high seed production, wind dissemination, lack of seed dormancy requirement, preference for undisturbed areas (i.e. tree and vine rows), and adaptability to both moist and dry soils.

To get these weeds back under control, it is important that growers, managers of non-crop areas, and other land owners all do their part to help resolve the issue. Regardless of control tactics used, preventing new seed production is a must to be successful. It is also critical to understand what we're dealing with when it comes to timing management efforts.

Although considered summer annuals, they have also been seen emerging in early October in the southern San Joaquin Valley (see Figure). During this time, they appear to go through an over-wintering or "survival" stage, where root growth seems more important than leaf production. So, by the time spring emergence occurs in mid-February, plants that actually emerged several months earlier may only appear to look the same as those that just emerged. This may help explain why some late-winter or early-spring applications of postemergence herbicides are not as effective.

Relying only on postemergence products can make horseweed and hairy fleabane very problematic. Consider including effective soil-residual herbicides (Table 1) where possible. Once under control, apply treatments every 2nd or 3rd year to maintain their control. Also consider making split-applications in Oct/Nov and again in Jan/Feb if you have seen them emerge during these periods in your specific area. If you farm in a groundwater protection area (GWPA), you will have to get a permit to use some of these products (refer to your county agricultural commissioner for local GWPA regulations). It is important to know, that while most of the effective materials on these weeds fall under GWPA regulations, they can still be used in many cases and should be considered.

Figure. Observed horseweed and hairy fleabane growth and development in central California

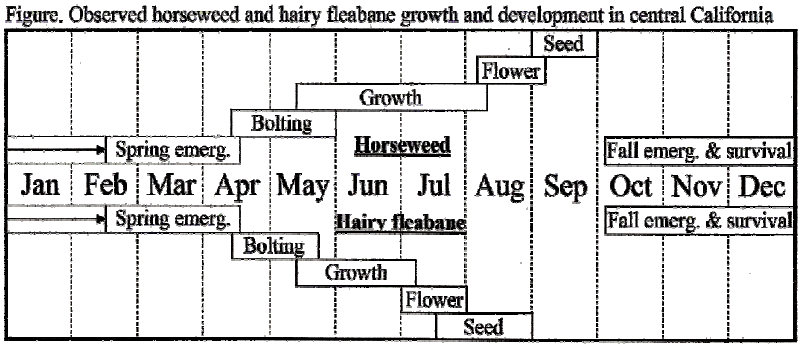


Table 1. Preemergence herbicides for horseweed and hairy fleabane control in tree and vine crops in California

Herbicide	Notes
Bromacil (Hyvar X)	Citrus >4 years, GWPA permit needed, 3-4 lb/A in fall and winter, HW=C, HF=C
Bromacil + Diuron (Krovar)	Citrus >3 years, GWPA permit needed, 3 lb/A in fall and winter, HW=C, HF=C
Diuron (Karmex, Direx, etc.)	Established fields, GWPA permit needed, 2 lb in fall and winter, HW=P, HF=P
Isoxaben (Gallery T&V)	NB fields only, 10.6 oz/A, HW=C, HF=C does not control grasses
Flumioxazin (Chateau)	Bearing almond/pistachio/grape, NB others, 6 oz/A fall and winter, HW=C, HF=P
Norflurazon (Solicam)	Established fields, GWPA permit needed, 2.5-5 lb, adjust to soil type, HW=P, HF=P
Oxyfluorfen (Goal, etc.)	NB citrus, bearing/NB others, 6-8pt/A, HW=P, HF=P
Simazine (Princep, etc.)	Established fields, GWPA permit, 2 qt or 2 lb fall + winter, mix w/diuron, HW=C, HF=P
Thiazopyr (Visor)	Bearing/NB citrus, NB others, 4 pt/A winter or 2 pt in fall and winter, HW=P, HF=P
NB = non-bearing only HW = horseweed HF = hairy fleabane C = effective control P = partial control *This is not a complete list of registered products available. Check with your pesticide dealer for other products available. It is not a written recommendation for herbicide use. Always read and follow all label recommendations.*	

Sensitivity to postemergence herbicides decreases the older horseweed and hairy fleabane get. Use higher label rates of effective materials (Table 2), proper coverage, and treat when they have <21 leaves and prior to bolting to improve control. In many cases, failure to control these weeds with glyphosate (Roundup and similar products) has been attributed to treating too late and/or using too low a rate (Table 3).

Table 2. Effect of glyphosate rate and timing on control

Hairy fleabane growth stage and lb ai/A for good control	Horseweed growth stage and lb ai/A for good control
3-6 leaf = 0.5	5-8 leaf = 1.0
7-12 leaf = 1.0	11 leaf to 4" bolted = 2.0
13-19 leaf = 1.5	4" to 12" bolted = 4.0
20-21 leaf = 2.0	
>25 leaf = erratic	
Prather, UC KAC 1999 and Shrestha et. al., UC KAC 2005	

Table 3. Herbicides and rates for control at < 21 leaves

Herbicide	Rate/A
Rely + AMS	1 to 1.5 gal
Gramoxone Inteon, etc. + NIS or COC	2.0
Roundup Weathermax, etc.	47 fl oz
Shark EW + COC	2 fl oz
2,4-D (Dri Clean, etc.)	1.55 lb
Glyphomax, etc. + Chateau	64 fl oz + 4 oz
Read and follow label for rates and recommendations.	

Also consider using spray additives (citric acid, ammonium sulfate, spreaders, etc.), if allowed on the label, to improve activity. Tank-mixing various postemergence products can also work well (i.e. glyphosate at 2 lb ai/A plus 2,4-D at 1.5 lb ai/A or Chateau at 2-4 oz/A) are effective treatments. There are numerous products sold in California that contain glyphosate, but they do not all contain the same amount of active ingredient. Read the label carefully to make sure you are using the correct amount of product that will give you a rate of at least 2.0 lb ai/acre (Table 4). If you are using recommended label doses and herbicide timing *and* are using properly calibrated and operating spray equipment and you still have some of these weeds escaping control, contact your local farm advisor and chemical representative to make sure you do not have an herbicide-resistant biotype. If it is determined that you do, you will need to make changes to your weed management program as soon as possible to eradicate the problem.

In addition to appropriate herbicide selection and use, cultivation can also play an important role in horseweed and hairy fleabane management. Use shallow cultivation to dislodge small plants (<4" tall) from the soil. Cultivating in moist soil will improve control. Where in-row equipment (like Bezzerides) can be used, control can be excellent. Mowing does not control these weeds and should not be used. Studies have indicated that

the seeds of these weeds do not germinate well in soils that have been disturbed through cultivation. The small, light seed do not emerge from the soil if buried more than a few millimeters deep and are only viable for 2-3 years after production. Scrapping or disturbing the soil lightly before weed germination can be an effective means of control.

Managing horseweed and hairy fleabane can seem like a daunting task. However, with the proper selection and use of chemical and mechanical tools, management can be possible. One thing to keep in mind when attacking these two weeds, other weed species may also be waiting for their opportunity once you have got these out of the way. So, it's a good idea to routinely monitor your fields following each herbicide application and check for any kind of weed escape or shift in the types of weeds present.

Table 4. Comparative rates of some glyphosate products

Herbicide	Fl oz for 2.0 lb ai/A
Touchdown Hitech	42
Roundup Weathermax	47
Touchdown Total	50
Roundup Original	64
Glyphomax	64
Touchdown	70

A Comparison of the New "Sequoia" Fig Cultivar (UC Selection 24-50E) with Recent Release "Sierra" and the Standard Fig Cultivars Used in the California Fig Industry.

J.F. Doyle, Fig Breeder/Evaluator, Kearney UC Research and Extension Center
L. Ferguson, UC Extension Specialist, Kearney UC Research and Extension Center

The California fig industry is currently producing on about 16,000 acres. A "2002 Statistical Review" published by the California Fig Advisory Board and California Fig Institute at Fresno lists seven cultivars used primarily (although in some cases not exclusively) for dried whole figs and fig paste. These seven cultivars are Calimyrna (6,559 acres}, a four cultivar grouping identified as "Adriatics" but including Conadria, Adriatic, Di Redo and Tena (3,364 acres in combination), Kadota (1105 acres) and Mission (3702 acres). Two additional cultivars are used in California primarily for the fresh market. These are the California Brown Turkey (about 2000 acres) and a new 2005 UC release, the Sierra fig (about 200 acres). The above nine cultivars differ substantially from one another in aspects of usage, horticultural type and fruit characteristics. The Sequoia fig is being released for use in the fresh market. Although of good quality when dried, it develops both a dark skin and a dark pulp color that limits its acceptability as a dried product. Of the above nine cultivars, only five are sold fresh. These are the CA Brown Turkey, Sierra, Calimyrna, Mission and Kadota. Only these five will be compared, as follows, to the Sequoia. The four "Adriatic" class figs are used only as whole dried figs or fig paste. All are of too small a size for the fresh market.

Horticultural Types

Two horticulture types of figs are found in the California Industry. The first of these, the "Smyrna" type fig, needs to be pollinated (caprified) in order to set fruit that will persist on the tree until maturity. The Calimyrna is the only cultivar of this type grown commercially for fresh consumption in California. All of the other four fresh market figs listed above, as well as the Sequoia, are of the "common" type. These common types do not need to be pollinated in order to set and mature fruit. The advantages of the common type figs over the Smyrna type are substantial. A common type fig grower does not need to maintain caprifig trees or to buy caprifigs from other growers, does not need to treat the caprifigs to disinfect the wasps (the pollen vectors) living in the caprifigs, does not need to distribute the caprifigs throughout the Calimyrna orchard and does not have to deal with the variables or the costs of the caprification process. Climatic factors such as heat, cold, rain, wind and disease can have a substantial impact on the success of the insect vector of the pollen and the eventual level of productivity of the Calimyrna crop. A good Calimyrna orchard often produces only in the 0.5 to 1.0 ton of dried fruit range in comparison to at least twice (sometimes three times) that tonnage from common types. Were it not for the excellent quality of the Calimyrna product, when well grown, it would probably not be planted in California at all.

Usage

The CA Brown Turkey is grown almost exclusively for the fresh market. It does not dry well. The Calimyrna, Mission and Sierra are dual-purpose figs, all three dry well, with some growers often directing part of the crop to the fresh market. The Kadota is a multiple use cultivar that can be dried, canned and picked for the fresh market successfully.

Fruit Characteristics of the Five Fresh Market Figs Grown in California

The Calimyrna fig is a green-yellow to yellow skinned fig with amber pulp. As noted above, the cultivar requires caprification to set a crop. The first (Breba) crop drops without coming to maturity because caprifigs containing pollen and the vector wasp are not available at the time the Calimyrna Brebas require pollination. The second crop is abundant but of limited duration (from late August to late September in Fresno County). Fruit set coincides with the mid-summer (or profichi) flight of the fig wasp. When the flight is complete, no more fruit is set for that season. Early in maturity of the second crop, fruit size is large, although size can drop off in late September. The size of the Calimyrna fruit eye (or ostiole) is the largest of all the commercial cultivars and can range from 2.2 to 3.5 mm, allowing substantial amounts of internal insect infestation and spoilage. The cultivar is also prone to large numbers of eye splits during periods of high humidity, cool weather or rain. Fruit quality, when the fruit is grown well, sets the standard for excellence.

The California Brown Turkey is a purple-violet colored fruit with areas of yellow to yellow-green visible, especially over the fruit neck and near the fruit stem. Pulp color is a strawberry red. This cultivar is of the common type, not needing caprification. The CA Brown Turkey can set a small crop of large sized first crop (Breba) fruit. As grown in California, however, the tree is severely pruned in the winter to keep it short in height and to facilitate hand harvesting of the large second crop from the ground. This pruning essentially eliminates the first crop. The second crop is abundant and the fruit is large and retains its large size well into the harvest season. Since the CA Brown Turkey is a common type fig, once fruit production begins in late August, fruit will continue to develop and mature until fall. Production ceases only when the orchard dries out and the tree stops producing extension growth, or when a weather event (rain, frost, etc…) damages the fruit or sends the tree into dormancy. The fruit ostiole is relatively large and in some locations the fruit can be subject to insect infestation and souring. Fruit quality is good when harvested with sufficient maturity.

The Mission fig is a violet-black colored fig with the coloration usually covering the entire fruit surface. Pulp color is a strawberry red. This cultivar is a common type fig not needing caprification. The cultivar usually sets a good crop of Breba fruit that are large in size and of very good quality. These Mission Brebas are often harvested from orchards that have been established to produce fruit for drying. Such trees are often very large and picking can be difficult and expensive. The Mission second crop is abundant and also of very good quality. Fruit size of the second crop is large enough to pack fresh for a week or two, but then size diminishes rapidly, eliminating its use for the fresh market. The fruit ostiole of both the Breba and second crop is quite small and fruit spoilage is usually not a problem. Fruit quality of both crops is very good.

The Kadota fig is a medium sized greenish-yellow skinned fruit that is grown only in limited quantity for the California fresh market. Pulp color is amber. The Kadota is a common type fig. Production of a Breba crop can be variable, from light to good in volume. The second crop is abundant but most fruit is too small to be valuable for picking fresh. Towards the end of the season many small, dry, commercially worthless fruit, known as “puffballs”, can be present. The fruit ostiole is medium in size, partially restricting insect access. Fruit quality of the Brebas and second crop is sweet and good.

The Sierra fig is a new cultivar, released for planting to California growers by UC in 2005. Although developed as a high quality fig for drying, initial plantings are being made for the fresh market so that the new cultivar appears to be suitable for both purposes. Skin color of the Sierra is a yellow-green and pulp color is amber. The Sierra is a common type fig. The Breba crop of Sierra to date does not appear to have commercial value. The Breba crop has been light and the figs produced have not been particularly large or highly flavored. The second crop, however, is abundant. The fruit is medium to large in size and holds fruit size well into the fall. The fruit ostiole is very tight, effectively restricting insect access to the fruit interior. Fruit flavor is very good.

Sequoia Comparisons

The new Sequoia cultivar that is proposed for plant protection and release to the California fig industry has been developed for the fresh market. The fruit is yellow-green in skin color with reddish-amber pulp. This skin color is competitive with the yellow-green Calimyrna, Kadota and Sierra but complimentary to the violet-black colored CA Brown Turkey and Mission. The Sequoia is a common type fig. This gives it an advantage over the Smyrna type Calimyrna in productivity and production efficiency. The Breba crop of Sequoia ranges from light to medium in volume. The Brebas are large in size with very good quality. The production of saleable Brebas gives the Sequoia an advantage over the Calimyrna, CA Brown Turkey and Sierra cultivars that either develop very few or no Brebas at all. The second crop of Sequoia is abundant with large to medium size. The Sequoia appears to maintain fruit size well into the fall in contrast to the small late-season fruit size of the Mission and Kadota and the absence of fruit on the Calimyrna. The ostiole or eye of the Sequoia is very tight, similar to the Sierra and Mission but substantially tighter than the Calimyrna, CA Brown Turkey and Kadota. The fruit flavor and quality of the Sequoia is as good as or better than all of the five established cultivars listed here with the exception of the Calimyrna. The Sequoia, which has Calimyrna in its pedigree, approaches the flavor of Calimyrna, but the Calimyrna, with all of its many production problems, still retains its position as the premier quality fig.

Agricultural Experiment Station
1907 – 2007
University of California, Riverside

A CELEBRATION OF AGRICULTURAL RESEARCH & EXTENSION

The agricultural sciences have a distinguished tradition and international reputation at the University of California, Riverside. The Citrus Experiment Station at UCR, which conducted research in support of production agriculture in California, will celebrate its 100th anniversary in 2007. In a series of special events during the next two years, we will celebrate the accomplishments of Riverside scientists and their impact on the agricultural industry and contemplate the next century of excellence in agricultural research.

Milestones:

- Officially opened February 14,1907 at the base of Mt. Rubidoux
- Moved to its new site in 1918 (which is now UCR's Anderson Graduate School of Management)
- Was the rootstock for a new University of California campus which opened in 1954
- In 1961, the name was changed to the Citrus Research Center and Agricultural Experiment Station to reflect a changing community and the expanding research in all aspects of agriculture

Today, UCR has developed into a comprehensive research university with more than 17,000 students and is made up of several colleges, centers and institutes. The Agricultural Experiment Station and Cooperative Extension continue to be an important component of our responsiveness to the community. Agriculture in California continues to face challenges due to the influx of new pests and pathogens and an uncertain future water supply, among other issues. This anniversary celebration provides a special occasion not only to celebrate past accomplishments, but to reaffirm a commitment to research and education in agriculture and natural resources.

Centennial Banquet
February 14, 2007
Riverside Convention Center
Cost: $75

4:00 p.m. Welcome & Wine Tasting / Historical Photos, Citrus Labels,
6:15 p.m. Exhibitor & Poster Displays
6:30 p.m. Banquet and Centennial Program
9:00 p.m. Master of Ceremonies: **Huell Howser** (KCET) *Tentative*

Centennial Symposium
February 15, 2007
Riverside Convention Center
Cost: $100

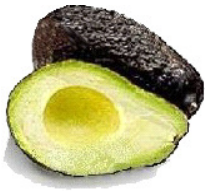
7:30 a.m. Symposium – "*Agricultural Sustainability and New Technologies –*
3:00 p.m. *The Next 100 Years"*

Featured Speaker: **Dr. Lowell Catlett**, Economist, Futurist and Regent's Professor, New Mexico State University, *"Tomorrow's Agriculture: Six Trends You Can't Afford to Miss"*

Other Topics: *"Agricultural Sustainability & Pest Management", "Agricultural Biosecurity", "Agricultural Biotechnology", "Natural Resources, Environment & Water Sustainability", "Technology Transfer and Commercialization"*

For more information, contact Carol Lerner at (951) 827-5089 or carol.lerner@ucr.edu

Topics in Subtropics



July – September 2006

Farm Advisors: **Peggy Mauk**
Eta Takele

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