

THE POSITIVE POINTS SYSTEM FOR CITRUS

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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. Preplant 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	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 (a grower practice). Question 7 asks if the grower is aware that some rootstock and scion combinations are incompatible (grower knowledge). 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. Sample set of questions on horticultural management

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 citrus management practices but also stewardship of a product that is safe for consumers.

Table 3. PPS questions relating to food safety

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?

Table 4 shows that the questions about weed management are fairly general, but give an indication as to whether the growers is simply treating weeds as he sees them, or is considering the species of weed, the stage of plant, the type of herbicide, the weather and the alternatives to persistent herbicides.

Table 4. PPS questions relating to weed management

IV. PEST MANAGEMENT: D. WEED MANAGEMENT

Goal: To use methods that minimize weeds that compete with citrus trees or that harbors pests and to minimize contamination of groundwater.

5 pts	Questions	NA
	1. Are you familiar with the weed species that grow in your orchard?	
	2. Are weeds treated at a stage when they are most susceptible to the herbicide?	
	3. Is spot spraying part of your weed control program?	
	4. Are contact herbicides used instead of pre-emergent herbicides?	
	5. Where soil leaching is a problem, have you discontinued the use of triazines or other problematic herbicides that may leach into the groundwater (i.e. simazine)?	
	6. Do you vary your herbicide application rate according to climatic conditions?	
	7. Do you position your microsprinklers to take advantage of tree shading and reduce weed growth between trees?	
	8. Do you grow a cover crop for weed suppression?	
	9. Are you aware the summer weeds can increase your orchard water usage.	

Benefits of completing a PPS for the Grower:

- The grower identifies areas of citrus management that need more attention. For example, a low point accumulation in the area of soil management, indicates 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 helped 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 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 a category will alert educators to subject areas that need attention. 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. These data can be used by Extension and research personnel to demonstrate that learning and change are taking place.
- Analysis of the PPS completed in different regions of the state (coastal, central, desert, southern) will reveal regional differences in pest management practices.

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

There is no cost, other than time, for being a “Participating Grower” who completes a PPS for Citrus assessment. It will take 1.5-2 hours to complete each assessment and this should be done once a year. Growers may want to complete more than one assessment if they have different management practices in different orchards. While the score is used to analyze trends, the grower name will never be published. Growers don’t compare their scores to other growers, but compare practices between their own orchards or look at practices in the same orchard through time.

How does a grower complete the PPS for Citrus Assessment?

UCCE Citrus Farm Advisors (Tulare, Kern, Fresno, Riverside, Ventura, San Diego, San Luis Obispo) will be hosting grower meetings throughout the state of California during Jan-Feb of 2007. 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.

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