

November Task List
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Season Wrap Up: It looks like we wound up with about 600 million pounds. Only God knows how many million navel orangeworm got, but you all know it was a bunch! Processors have their hands full delivering the quality nut California is know for. Many growers I speak to ask, “What happened?”. From my discussions with many crop consultants, what DIDN’T happen was sanitation! This was not only true for the pistachio growers, but almond producers as well. Growers barked at me about the wet weather making orchard access difficult to impossible, the size of the trees making sanitation cost prohibitive, and the difficulty in getting the nuts out of the trees. These issues are all true. So, if you decide that you cannot sanitize, then you had best figure out how you are going to run the ranch on pistachios that are 30 to 40 cents less valuable than those with low worm damage. I know I sound like the donkey’s behind with all the answers, but the pistachio industry needs to join forces with the almond guys to determine what we can collectively do to reduce the overwintering NOW population. There has been millions spent studying NOW, and I have NEVER waived on the fact that sanitation is the cornerstone to controlling this beast! I also still think that once we get the kinks out of mating disruption, that everyone should use it as a means to SUPPRESS the population. Note that I did **NOT** say, “Control it as a stand-alone program”, just in case someone out there wants to stuff words in my pie hole! We are in DESPERATE need of an effective adult monitoring tool for NOW mating disruption. I hope this comes soon, in order to give pest managers a method of knowing when the pheromone is not reducing mating sufficiently. We also need more research on the cultural and environmental factors affecting the number of early split nuts, which become the NOW link to the new crop at harvest.

Sanitation: Now is the time to begin winter sanitation by removing the nuts that did not come off during harvest. Many of these nuts are blank, but do not assume that all of them are. Research by many good scientists has proven that winter sanitation is the key to breaking the overwintering NOW population cycle, which looms ever greater when the winter is warm and dry. Beginning the season with a large overwintering population simply reduces the effectiveness of your in-season sprays. Although the research has not been done, to my knowledge, the TIMING of sanitation may be a factor in its efficacy. Nut removal and destruction early in the fall may be more effective, because the percentage of NOW lava in the early instar stages should be greater. This is due to the large peak in egg laying that occurs during hull degradation. Thus, they may be more susceptible to desiccation or fungal attack because of their smaller size. Disturbing their overwintering site from the tree onto the ground early also places more environmental pressure on their survival. This is just my opinion; it may be worthy of investigation.

Weed Control: It is time to get together with your crop consultant and go over the weeds you have in your orchard, and how best to approach controlling them. The list of weeds resistant to glyphosate is increasing, and weeds make it harder to control gophers, voles and destroy NOW mummies. We have a wide range of very effective pre-emergent herbicides registered for pistachios. Kurt Hembree, Vegetation Management Farm Advisor, Fresno County, has current weed susceptibility and herbicide registration information at: http://ucanr.edu/sites/Weed_Management/files/74887.pdf. Kurt has suggested rates of application for each product, along with suggested adjuvants. This is an excellent resource to help in effective material selection. Growers with young orchards must get their nutsedge and fleabane under control now to prevent expensive problems later.

Pruning: The goal of a good pruning program is to manage the canopy over the life of the orchard in such a manner as to achieve the maximum possible yield of clean open split-nuts from an efficient harvest. In our quest for this goal, we must couple our knowledge of how pistachios grow and fruit with the research data developed over the past 30 years. One thing to remember about pruning is that we must think in terms of **TWO** years, rather than just **NEXT** year if we want to better manage alternate bearing. Pruning harder prior to an on-year improves the yield during an off-year, in my opinion. Dr. Ferguson and I have begun a project to test this hypothesis.

Let's first briefly review what we know about the growth and fruiting habit of pistachio. This tree is very apical dominant, meaning that it does not branch readily and grows mostly from the terminal bud and one or two lateral buds behind it. Therefore, branching must be forced by removing the end portion of a limb, known as a heading cut. Heading cuts are performed regularly during the training years to develop the desired branching. Because of pistachio's apically dominant nature, it also does not develop girth (enlargement of trunk and limb diameter) rapidly. Consequently, main structural limbs have to be headed shorter than desired in order to keep them upright.

The fruiting characteristics of pistachio also greatly influence pruning. Flower buds are born on one-year-old wood, typically towards the base of medium to long shoots and adjacent to the terminal vegetative bud on short shoots (spurs). The lack of lateral branching causes the fruit-bearing wood to become increasingly distant from the central axis of the tree. Failure to contain the tree canopy to a diameter of about 17 feet results in crop falling onto the ground at harvest due to the limited size of the harvest equipment.

Eventually, the main structural limbs bend downward during the on-bearing seasons from the weight of the crop. Without corrective pruning, the pistachio tree canopy begins to take on the appearance of an umbrella. This combination of less upright fruiting limbs and their greater distance from the tree's center creates major problems for effective harvest. The high energy imparted to the trunk by the shaker can no longer be sufficiently transmitted to the fruiting zone for its removal. Some growers attempt to solve this by simply shaking the tree harder. The result is more frequent equipment breakage, rapid sling wear (the thick rubber sheets draped around the shaker pads for protection), excessive removal of next year's fruiting wood (spurs) and possibly greater tree stress from disruption of roots at the tree's crown. Harder shaking also flings the crop past the catch frame of the harvester.

The solution to the above problem is to prune the pistachio with the objective of "pushing back" the canopy perimeter (reduce its diameter) and directing growth upward. This is accomplished principally by "thinning cuts", which is the complete removal of a limb at its point of origin. To achieve a more compact and upright tree, thinning cuts are made to flat limbs around the outside of the tree and within the canopy where excessive fruitwood exists. Care should be taken to not perform too many cuts in any given sector of the canopy unless the fruitwood is unusually abundant. In addition to distributing the thinning cuts over the entire tree, avoid removing all of the lateral limbs on a specific structural branch in order to make room for adjacent branches. Rather than creating these so-called "snakes", it is better to leave the best structural branch minimally pruned and remove the competing branch entirely. Also avoid opening the center of pistachios. We do NOT want them to look like peach trees at the completion of pruning. Because of the growth and fruiting habits described, pistachios will naturally open up and allow sufficient light into the canopy center for fruitwood production. Loss of fruitwood in the middle of the tree over time is, in my opinion, more a function of apical dominance than insufficient light penetration. So, remember, prune to keep the pistachio canopy compact and upright for productivity and harvestability.

Above all, remember that we DO NOT want **mature** trees to be pruned to the point that they produce lots of long whips! Although this looks good, it most likely means that the tree has been over pruned. Work by Tim Spann, shows that pistachio has "preformed shoots". These are shoots with 7-9 bud positions set **BEFORE** the season begins. Providing the tree is not excessively vigorous, these preformed shoots grow into spurs and set lots of crop. If mature trees are over pruned, these preformed shoots are "pushed" into continued growth. I believe the most productive pistachio tree is one that has hundreds of these short, preformed shoots, rather than lots of long whips.

More on pruning next month! Happy Farming!