

MANAGING WALNUT HARVEST FOR QUALITY

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In spite of the extensive frost damage experienced by some walnut growers last April, there are some very heavy crops in all varieties this year. The next challenge as you prepare for harvest will be to maintain high nut quality by keeping in mind the most critical factors.

Early harvest pays. The most important fact to remember when harvesting walnuts is the earlier the harvest, the lighter the kernel color; the lighter the kernel color, the more money per pound you'll receive. Kernels are mature and at their lightest and highest value at the packing tissue brown stage when the packing tissue around the kernel has just turned brown.

Before harvest can begin, hulls must split and separate from the shell. Hull split is favored by cool weather, humidity, or rain. Valley temperatures are usually hot at the beginning of harvest which hastens kernel maturity but delays or prolongs hull split, sometimes for several weeks. Kernel color may darken while navel orangeworm and mold damage may increase with time.

Walnut varieties differ in their ability to produce light colored kernels and to retain light color after processing. Chandler retains light kernel color for a long period of time while Howard can become darker relatively quickly after processing.

Optimizing light kernel color: The trick in the hot central valley is to get hull split to more closely coincide with packing tissue brown. To **promote early harvest**, ethephon (sold as Ethrel®) can be used to advance hull maturity. To advance harvest by about 7 to 10 days, apply ethephon when the packing tissue of all nuts just turns brown. Typically, about 17 days later, nut removal will be about 90 percent. Applying ethephon before packing tissue brown will result in decreased kernel weight. Start checking the packing tissue of earlier harvested varieties like Ashley and Serr by mid-August and later harvested varieties before the end of August if you plan to apply ethephon.

Some uses of ethephon for early harvest include:

- Treating varieties whose kernels tend to be darker like Vina or those that darken more quickly after processing like Howard.
- Treating early varieties if processors provide early harvest incentives
- Treating young Howards that will be sold in shell
- Treating orchards that suffered late walnut husk fly or navel orangeworm damaged nuts last year

Ethephon can also be used to **promote a one shake harvest** by applying it about ten days prior to normal harvest date. Applying ethephon on some blocks to advance harvest may be very helpful in managing a large Chandler crop this year. Thorough spray coverage is essential when using ethephon, it should not be used on stressed trees, and applications should be made when air temperatures are below 90°F.

What else can you do to keep walnut kernels light? Once harvest begins, pick up, hull, and dry nuts as quickly as possible. Most quality loss occurs in the first 9 hours after harvest. The hotter the temperature, the more quickly kernel color darkens. Do not allow walnuts to become water stressed during the summer or before harvest. Cutting off water too early before harvest can

result in hulls shriveling and darker kernel color in severe drought situations. Drying times of less than 24 hours will help keep Howard kernels light in color.

Oilless nuts. Nuts where hulls split prematurely are oilless. These nuts have a white kernel, a dark pellicle (outer skin), and have no value. An early drop of oilless nuts is more common on certain varieties like Vina especially in heavy crop years. Visit my website at <http://cesutter.ucdavis.edu> to see photos of oilless nuts compared to normal walnuts.