



## Apple and Pear Harvest Timing

Most gardeners and homeowners have one or more fruit trees and are starting to wonder when their fruit will be ready for eating, sauce making, or pies! Some of the earliest maturing apples are already mature, but most apple cultivars and all pear cultivars are still going through the maturation and ripening processes. There are some physical signs to watch for in your fruits to help you assess when they are at optimum harvest timing.

Unfortunately, we can't just look at the calendar and know that a particular apple or pear cultivar is mature and ready to harvest. If you have a few years of experience with your trees, you will have good ideas as to their maturity timing, but a particular cultivar's true maturity may change as much as two weeks from year to year. Instead of the date, we have to rely on physical clues that fruits give us, and maybe adding in a little bit of minor detective work.

The most commonly used and most easily seen clue is skin color. Overall fruit skin color changes over time, usually going from bright green early in the year, to duller green, then moving toward the fruit's final color. Fully red fruits will have subtle color changes, such as having less bright coloration or developing/losing some degree of mottling, but color change is difficult to assess with these cultivars.

Color change of any cultivar that is yellow, mottled, or not completely red is at least a good indicator of maturation. In particular, you want to look at the area inside of the stem indent. This zone's color, known as the ground color, is the last area to change as the fruit nears maturity. When this area changes from greens to yellows and reds, that is a strong indicator the fruit is nearing maturity.

The other physical aspect we can use as an indicator without cutting fruit open is their general hardness. As fruits mature, flesh density changes from hard to firm to soft. Soft means that the fruits are overmature and have already started losing flavor and storage capability. Firm vs. hard can be assessed with finger pressure. Pushing onto the fruit with your thumb consistently as days or weeks pass, you will be able to feel the resistance differences. Immature fruit are more baseball like, whereas maturing fruit flesh will give a bit, and overmature fruit yield very easily to pressure.

The other two key indicators require a knife, as they are seed color and starch to sugar conversion. These also get us to the discussion of mature vs. ripe. A mature fruit has seeds which are capable of germinating. A ripe fruit has converted nearly all of its starch content into sugars. An overripe fruit has completed all starch conversion and is going to decrease in quality quickly.

Seeds of ripe apples turn brown, but you need to cut a fruit open to see this trait. Many cultivars will be ripe before their seeds turn completely brown, especially early maturing types. Thus, you do need to conduct this assessment consistently and watch for changes from white to part brown to full brown. Also, knowing how that cultivar's change has occurred in past years gives you a very good indicator of their status in the current year.

Starch conversion is harder to measure, but discerning palates can do so pretty readily. Immature fruits store energy in the form of starches. As fruits mature, the starches are converted into sugars. The sugars are meant to attract things like us to eat the fruit and then spread the seed naturally. A full starch fruit is bland tasting, at best. Fruits that have transformed all starch into sugar are going to be soft and overly sweet, and will likely have started losing some of their typical cultivar trait flavors.

Assessing this conversion takes practice and consistent sampling over time, probably with some accompanying sour looks on your own face.

Conversely, if you want to take a more scientific approach and do a home science project with kids or grandkids, you can cut fruits in half and dip them in an iodine solution. Iodine stains starch a purple coloration, so you can truly see and compare maturity of one fruit to another and from week to week. The starch to sugar conversions generally start near the seeds and work outward through the fruit. Thus, immature fruits will be stained throughout the cut surface, while maturing fruits will only stain in a ring under the skin. Of course, if you do this, be careful and wear appropriate nitrile or similar gloves, as the iodine solution is poisonous. Also, do not eat tested fruit, nor give them to livestock.

Pears undergo the same types of changes as detailed above for apples. The issue with pear maturation is that it tends to happen more quickly, meaning that color and density transitions will be faster. Also, pears should not be allowed to ripen on the tree. Instead, they need to be picked and properly stored in the house to let them mature. A pear that is left to mature on the tree will often go from ripe to mature to overmature in a matter of days, leaving you with very low quality fruit that may not even be usable anymore.

If you are interested in learning more detail about apple ripening and assessing fruit maturity, there is an Extension publication specifically written for this topic. Download it free at <https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3743-E.pdf> or search for "When are Apples Ripe?" by Teryl Roper. A newer version oriented more toward commercial growers goes into even more detail, written by Amaya Atucha and Janet van Zoeren, found at <https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A4156.pdf>

Also, for tips on harvest and storage of fruits and vegetables both, view Extension publications such as "Storing Fruits and Vegetables from the Home Garden", at <https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3823.pdf>

You can also contact Scott Reuss, Marinette County Agriculture & Horticulture Agent, at 715-732-7510 or e-mail to [scott.reuss@wisc.edu](mailto:scott.reuss@wisc.edu) to get more information on this or any other horticultural or agricultural questions.