

When are apples ripe?

Teryl R. Roper

DIFFERENT APPLE CULTIVARS RIPEN over a long season. In Wisconsin, apples ripen from late July through October. While a given cultivar ripens during the same season each year, it is impossible to specify an exact date when ripening will take place.

It is important to differentiate between the maturity and the ripeness of fruit. Mature fruit has completed its development and is physiologically capable of continuing the ripening process, even when it has been taken from the tree. Ripe fruit is at its peak for texture and flavor; it is ready to eat.*

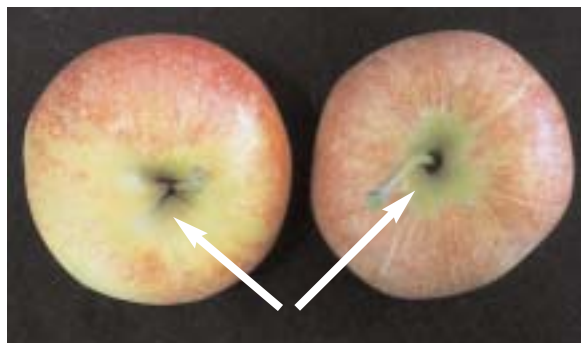
How can I tell if my apples are ripe?

No single method of determining apple maturity will work for all cultivars in all years. Some people count the days between bloom and harvest, but that technique is considered unreliable. Yearly variations in temperature, water and sunlight affect the date when apples mature. A general idea of apple maturity dates may be obtained from nursery catalogs. The Extension publication *Apple Cultivars for Wisconsin* (A2105) also has information about ripening dates.

*Fruit that is mature but not fully ripe will store longer.

We do know some indicators of apple maturity that, when used together, will suggest when fruit is ready to pick. One is the **color of the fruit's skin**. Immature apples are green. As they mature, they change from green to light green; then to red or yellow. However, some highly colored apples change to red weeks before they are mature, so color is not always a reliable indicator.

Ground color is another good indicator. Ground color is the color of the skin in the stem indentation. As apples mature, the ground color changes from a bright green to a lighter green and then to yellow. This change is a good indicator of maturity on cultivars such as McIntosh, but is useless on Red Delicious and other solid red apples.



Ground color is the color of the skin in the stem cavity. As apples mature, this color changes from green to a lighter color (except in highly colored strains such as Red Delicious).



Skin color is not always a reliable indicator of maturity. All of the above apples are 'McIntosh' and all are ripe. Notice the great difference in skin color.

Seed color also may be of use in determining maturity. In general, as fruit matures, the seed coat turns dark brown. However, in some cultivars, the fruit is mature even though the seed coats are still white. This is particularly true of early ripening cultivars.

As apples mature, the flesh softens. Immature apples are hard. Mature apples should be firm and crisp, but not hard. By applying some pressure to the fruit with your thumb, you can feel a change in firmness over a period of weeks. Some experience is required to become adept at this technique.

As apples mature, the flesh softens. You can detect this change by firmly pressing the fruit between your thumb and fingers. The flesh should give a little as it matures.



Immature apples taste starchy.

As the fruit matures, the starch is converted to sugars. The fruit begins to taste sweeter and the starchy taste disappears. The flavor and aroma of the fruit also become more pronounced as it matures. If you taste apples as they ripen over a period of weeks, you will be able to detect the starch changing to sugar and the flavor increasing.

How do I harvest apples?

Apples must be picked by hand. The fruit should be grasped between the fingers and the palm of the hand with the thumb near the stem. The fruit should then be twisted slightly and lifted upwards to break the stem from the branch (not the stem from the fruit). Leave spurs on the tree. Be

As the fruit matures, the seed coat turns brown. However, some apples have light seed, so this test is not always reliable.



careful not to grasp the fruit too tightly as this can cause bruises. Place the fruit gently into a bucket or picking bag.

If full buckets are to be emptied into boxes, place the bucket into the bottom of the box and with one hand holding the fruit in place, tip the bucket to the side and allow the fruit to gently roll out of the bucket into the box. Never throw fruit into a box, bucket or bag, or to someone on the ground. This will certainly cause bruising.

All the fruit of some cultivars will mature at the same time and should be harvested at the same time. For other cultivars, particularly late summer apples, the fruit matures over a period of a couple of weeks. Fruit on these trees needs to be "spot picked" three

or four times. Fruit generally ripens from the outside of the tree towards the inside and from the top to the bottom. Exposed fruit on the outside of the tree may ripen two weeks earlier than fruit on the canopy interior. Spot picking can also allow remaining fruit to achieve greater size and flavor before harvest.



As apples mature, starch is converted to sugar. This change is demonstrated by dipping fruit in an iodine solution. Iodine turns starch purple. The apple on the left has much starch and is immature. The two apples in the middle are mature, but still have a little starch. The apple on the right is fully ripe to over-mature and has no starch. This fruit would not store well.

If you must use a ladder, place it carefully so it won't tip. Do not stand on the top step. Don't lean ladders against outer limbs. The limbs will bend as the ladder supports your weight and may cause it to tip. One of the great advantages of dwarf apple trees is that most operations can be done from the ground so tall ladders are not needed.

How do I store apples after harvest?

Apples should be harvested when they are physiologically mature but before their peak of ripeness. Apples for eating fresh or for short-term storage (2–3 weeks) should be left on the tree until they are fully ripe. Store only sound fruit that is free from insect or disease damage. Cool apples for storage as quickly as possible and keep them in the refrigerator between 34°F and 40°F. Colder temperatures allow apples to be stored longer; however, don't allow the fruit to freeze. Keep it in plastic bags with small holes. The holes allow gases to leave the bags, but keep in most of the moisture while letting enough escape so that water does not condense on the apple skins.

What should I do if a frost is forecast?

Apples on the tree will tolerate light frosts (a temperature of 28°F or lower) with no apparent injury. However, severe frosts (25°F or lower) will damage fruit. Fruit that has frozen on the tree should remain on the tree until the temperature is above freezing. Apples that are still frozen at harvest will bruise easily. Apples frozen on the tree (not just exposed to a light frost) will not store well and should be used quickly or processed into juice or applesauce.

If a severe frost is forecast for your area and you still have immature apples on your tree, you need to make several decisions. Are the apples approaching maturity? If so, it may be best to pick and store them in a garage or other cool place. The fruit will continue to ripen off the tree if it is mature. If the fruit is not approaching maturity, you may choose to leave it on the tree and take your chances with the forecast.

What is the fruit to be used for? If it is going to be processed or used fresh within a few days, you can leave it on the tree. If you plan to store it for later use, you

should consider harvesting the fruit (especially if it is almost mature) before the frost.

Fruit on small, dwarf trees can be protected from severe frosts by covering the tree with a large tarp or plastic sheet. This will keep heat in the tree canopy. Additionally, a lit 60-watt light bulb can be placed inside a tarped tree to provide some heat. The light should remain on all night until the air temperature once again rises above 32°F. The goal is just to keep the fruit from freezing—not to keep the tree warm.

An occasional severe frost while apples are still on the tree should not discourage you from growing apples. However, if the fruit is consistently still on the tree when fall frosts come, consider planting a cultivar that matures earlier. Suggested apple cultivars are described in *Apple Cultivars for Wisconsin* (A2105) and *Home Fruit Cultivars for Northern Wisconsin* (A2582). These publications are available through your county Extension office, or from Cooperative Extension Publications at the address given on the bottom of the page.

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