

TRIPLOID WATERMELON (*Citrullus lanatus* var. *lanatus*)

Hybrid triploid watermelons, commonly called seedless watermelons, are more difficult to grow than diploid varieties. However, they can be grown successfully with some extra care and management. The seedless trait is a result of a traditional cross of a normal seeded diploid parent with a tetraploid parent. Although fruits from these plants are considered seedless, pips — thin, edible, whitish ovules — along with an occasional typical black seed may develop if the plants are exposed to stress.

SITE SELECTION:

Watermelon prefers a light, well-drained soil with a pH of 7.0. A location with a southern exposure is ideal, as it will help provide additional warmth. Soil moisture is important in the early stages of growth and during pollination, when the fruits are setting. Drip irrigation can prevent excess water on the foliage, which can lead to disease. Do not provide irrigation in the last week before fruits are ripe, as overwatering can cause bland fruit.

To maintain warm temperatures, the use of plastic mulch and row covers is recommended. In cool areas, solar mulch is preferred over black mulch because it warms the soil better. Plastic mulch also suppresses weeds around drip irrigation.

SEED STARTING:

Triploid seeds germinate weakly. Failure can occur if the soilless mix is too cool or too wet. The mix should be coarse, well drained, warm, 85°F/29°C, and moist but not wet. If you can squeeze a handful and get free water, the mix is too wet and if it is below 85°F/29°C it is too cool. Use a growth chamber or heat mat to keep the temperature of the mix at 85°F/29°C. This warm temperature is critical for proper germination and early seedling vigor.

Delay sowing the seedless watermelons and pollenizer until 3 weeks before the outdoor soil temperature is expected to be warm, at least 65°C/18°C, and after the danger of frost has passed. The triploid seeds and the pollenizer diploid seeds that are sent with the order should be sown at the same time, in separate trays. Fill 2–2½ inch cell-type containers with the soilless mix. Sow 1–2 seeds per cell, covering ½ inch deep with the

pointed end of the seed up or at a 45-degree angle to facilitate the shedding of the seed coat during emergence. Cover the plug trays with thin poly sheeting to prevent drying. Keep the poly-covered trays out of direct sunlight to avoid overheating. If the mix becomes too dry before seedlings emerge, mist with warm water, but keep on the dry side.

SEEDLING DEVELOPMENT:

When seedlings emerge, usually in 2–3 days, move them to full sun in the greenhouse. Maintain the greenhouse temperature at 85°F/29°C until full emergence; 70°F/21°C is the minimum, even at night. Thin to 1 plant per cell by using scissors to clip unwanted plants at their base, rather than by pulling them out. Once all the seedlings have emerged, reduce greenhouse air temperature to 75°F/24°C during the day and 65°F/18°C at night. Irrigate seedlings with water that has been preheated to 70–75°F/21–24°C.

ROW COVERS:

As mentioned before, the use of row covers can help maintain the warm temperatures necessary for a successful crop. Row covers make for earlier crops and better yields, especially in the North. Remove the covers when plants have female flowers — the flowers with a tiny fruit at the base of the blossom.

TRANSPLANTING:

Seedlings are ready for transplanting to the field about 3 weeks after sowing. The seedlings should have 2–3 true leaves, and roots that have sufficiently filled the cell to hold the soil mix when the plant is removed. Younger plants may be too fragile for handling and planting, older plants, particularly ones with 4 or more true leaves, are susceptible to transplant shock, which can delay plant growth and reduce fruit size and total yield.

Remove plants from cells carefully to avoid tearing roots. Transplant to the field only after the danger of frost has passed and midmorning soil temperatures are regularly at least 65°F/18°C at a depth of 4 inches. Cooler soil temperatures will delay growth. The seedlings should be spaced 18–24 inches apart with rows 6 feet apart. When transplanting, water with a high phosphorous transplant fertilizer.

INTERPLANTING POLLENIZER VARIETY:

You must interplant a diploid variety (we supply ‘Ace’) with the triploid variety to supply the pollen necessary for fruit production. In order to supply sufficient pollen, plant the pollenizer diploid variety at a ratio of at least 1:3 with the triploid. Unlike regular diploids, ‘Ace’ takes up no extra field space when interplanted within the existing rows of the triploid variety. Please see the diagram below for further explanation of 2 different spacing methods; both will supply enough pollen. The conventional spacing may be more efficient for larger growers. ‘Ace’ flowers for an extended period of time, so it will supply pollen the entire time triploids are making female flowers.

POLLINATION:

Pollination is essential for fruit growth. Honeybees are effective pollinating insects. It is critical that adequate numbers of bees are present when the crop blossoms. While the number of beehives necessary to provide thorough pollination varies with conditions, a ratio of 3 hives per 2 acres is usually adequate.

FERTILIZATION:

Nutritional requirements for triploids are essentially the same as for diploids, except that you must manage the triploids’ nitrogen fertilization more closely. Avoid excess nitrogen, which can result in hollow heart. Triploids are considerably more susceptible to hollow heart than diploids.

DISEASES:

Prevent the occurrence of disease by selecting varieties with resistances to diseases in your area.

PESTS:

Protect against cucumber beetles with row covers applied at the time of transplanting, or control with pyrethrin or azadarachtin.

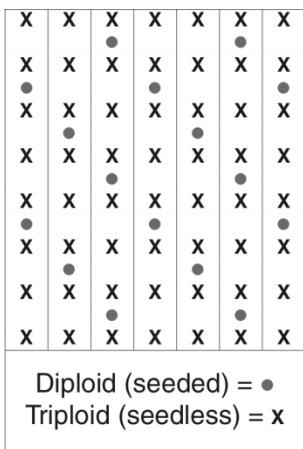
HARVEST:

There are numerous ways to check on the ripeness of watermelons. Usually a combination of testing methods works out best.

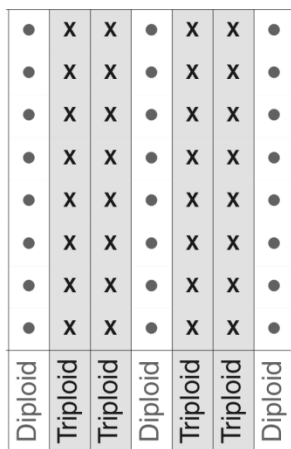
1. The tendril nearest the point on the vine where fruit stem attaches is browning or dead.
2. The spot where the fruit rests on the ground is yellow.
3. The classic mystery — you hear “punk,” as opposed to “pink” or “pank,” when you flick the melon with your fingers.

STORAGE:

Hold at 45°F/7°C and 85% humidity for 2–3 weeks.



Pollenizer inter-planted at 3:1 pollenizer ratio.



Conventional 2:1 pollenizer ratio using the row method.