Watermelons

Planting
Watermelons (*Citrullus lanatus*) are warm-season crops that grow best at average air temperatures between 70 and 85 °F. Melon seeds do not germinate well in cold soil. The soil temperature at the 4-inch depth should be 60 to 65 °F before this crop is planted. In the spring, do not plant this crop until after the last chance of frost.

### Planting Dates

<table>
<thead>
<tr>
<th>Area</th>
<th>Spring</th>
<th>Summer</th>
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<tr>
<td>Piedmont</td>
<td>Apr. 20-June 30</td>
<td></td>
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<tr>
<td>Central</td>
<td>Apr. 1-30</td>
<td>June 15-30</td>
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<tr>
<td>Coastal</td>
<td>Mar. 25-Apr. 20</td>
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**Piedmont:** Abbeville, Anderson, Cherokee, Chester, Edgefield, Fairfield, Greenville, Greenwood, Lancaster, Laurens, McCormick, Newberry, Oconee, Pickens, Saluda, Spartanburg, Union, and York counties.

**Central:** Aiken, Allendale, Bamberg, Barnwell, Calhoun, Chesterfield, Clarendon, Darlington, Dillon, Florence, Kershaw, Lee, Lexington, Marion, Marlboro, Orangeburg, Richland, and Sumter counties.

**Coastal:** Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Horry, Jasper, and Williamsburg counties.

Watermelon seed can be planted directly in the garden or transplants can be grown to get an early start. Watermelons need a lot of room. Seeds or transplants should be planted in rows spaced 6 to 8 feet apart. Plants should be spaced 5 to 6 feet apart within the row.

Under normal conditions watermelons grown from transplants can be harvested as much as two weeks earlier than melons grown directly from seed.

Black plastic in the field gives watermelons an early start to growth.

Another way to get an early start on a watermelon crop is to use black plastic mulch. The black plastic absorbs the sun's warmth, allowing the soil to warm
quickly. To plant, punch a small hole in the plastic and plant the seed or transplant. The black plastic will warm the soil faster in the spring and will also conserve moisture throughout the season. Other advantages of this type of mulch are weed control and a reduction of fruit rot.

If a second crop or fall crop is going to be planted on the black plastic mulch, spray paint the black mulch white. The hotter soils created by a black mulch become too hot during the summer and early fall. Spraying the mulch white reduces the amount of heat absorbed. One part inexpensive white latex paint to seven parts water works well. Be sure to clean out the sprayer thoroughly.

It is best to use drip irrigation in conjunction with the plastic mulch. Using drip irrigation instead of overhead irrigation keeps the foliage dry and reduces disease problems. It is also possible with the appropriate equipment to inject the needed nutrients through the drip line and spoon-feed the plants.

If earlier melons are desired, a row cover can be used alone or in combination with black plastic mulch. The row cover can be either clear polyethylene sheeting supported by wire hoops placed every 5 feet across the row or a lightweight "floating" type material. The clear plastic row covers will need to be vented by cutting slits in the side. Temperatures under these materials can get hot enough to inhibit plant growth and will need to be removed so pollination can occur.

Watermelons need a lot of room. Plant them in rows 6 to 8 feet apart. Transplants or seed in 6 foot row spacing should be 4 feet apart and 3 feet apart in 8 foot row spacing. A rule of thumb is to allow 24 square feet per plant. If starting from seed, plant the seed about 1 inch deep. Seedless varieties germinate best in very warm conditions with not too much water. It is best to start seedless transplants in an area where the air temperature can be kept around 92 – 95 °F for around 48 hours. After 48 hours move the plants to cooler (70 °F), conditions and full sun.

Recommended Varieties

Standard Seeded Varieties:
• Crimson Sweet
• Royal Sweet
• Top Gun
• Sentinel
• Sangria

Seedless Varieties:
• Liberty
• 7197
• 7187
• Majestic
• Obsession
• Fascination

Fertilizing

It is best to base fertilizer application on the results of a soil test. If a soil test has not been taken, apply 5-10-10 at 30 pounds per 1,000 square feet before planting. Melons should be side-dressed before the vines start to "run." Side-dress with 34-0-0 at 1 pound per 100 feet of row or calcium nitrate (15.5-0-0) at 2 pounds per 100 feet of row. Sidedress a second time after bloom when fruit is developing on the vine. Too much nitrogen fertilizer can encourage excess vine growth and reduce fruit growth. For information on how to submit a soil sample, please see HGIC 1652, Soil Testing.

Watering

Watermelons need a lot of water. In fact, water comprises 92 percent of the watermelon fruit. Surprisingly, the bulk of watermelon roots are found in the top 12 inches of soil. Consequently when watering, try and apply only as much water as the root zone (top 12”) can hold. Going beyond this
depth not only wastes water, but the nutrients in the soil solution as well. Proper watering may require several short duration water cycles during the day.

The use of drip irrigation is very beneficial in that no water is applied to the foliage but is applied to the plant root zone instead. An inexpensive timer attached to the water source and applying water to your drip system allows automation of multiple short irrigation cycles. Although watermelon plants should not suffer from lack of water during any growth stage, it is extremely important to maintain consistent irrigation cycles during fruit set and development. If using overhead irrigation, water in the morning so the foliage has time to dry before dark. Wet foliage encourages foliar diseases.

**Pollination**

Watermelon plants have male and female flowers. For proper fruit development, sufficient pollen must be moved from the male flower to the female flower. The male flowers produce big sticky grains of pollen when compared to pollen from most other plants. Consequently, wind movement of pollen from male to female flowers is inadequate, and insects, such as honeybees, native bumblebees, and others, are necessary for proper pollination. For proper fruit development, a female blossom requires between 500-1000 grains of pollen, which is usually achieved by around eight bee visits for seeded and twenty-one bee visits for seedless watermelons. The greater number of bee visits necessary for seedless watermelons is due to the pollinators carrying infertile pollen from surrounding male seedless flowers as well as fertile pollen from the seeded varieties.

The seeded varieties listed in the “Recommended Varieties” section have viable pollen, and if sufficient numbers of pollinators are available, fruit set should not be a problem. The seedless varieties listed above do not have viable pollen and will need a seeded variety planted within 10 feet to provide adequate pollen for seedless watermelon fruit set.

**Harvest**

Make sure to know the approximate number of days to maturity for the particular variety to be planted. For example, most of the varieties listed take between 85 to 90 days from transplant to first ripe fruit. From the time of fruit set, it takes approximately 35 days to fruit ripening. A few rules of thumb to use to help determine if the watermelon variety is ready for harvest:

- the fruit looks to be expected size,
- the tendril closest to the fruit turns brown,
- the skin color loses its gloss and becomes dull in color, and
- the bottom of the fruit has a large white to cream color oval spot.

**Problems**

Poor pollination is the most common cause of mis-shapened fruit. Honeybees and several species of native bees pollinate watermelons. If adequate pollen is not deposited, fruit may be mis-shapened. To promote proper pollination, consider establishing a honeybee colony on site. Honeybee information can be found at http://scstatebeekeepers.com/ and http://www.clemson.edu/extension/beekeepers/index.html. To protect pollinators, avoid spraying insecticides while bees are foraging, especially between 8:00 am and 4:00 pm.

Watermelon fruit may be mis-shapened because of poor pollination.

Justin Ballew, Commercial Horticulture Agent, Marion County, ©2016, Clemson Extension,

Blossom end rot is caused by a calcium deficiency within the plant. However, the development of blossom end rot may not necessarily indicate a calcium deficiency in the soil. Calcium is highly mobile in the plants, and a consistent supply of calcium in the soil solution is necessary to prevent blossom end rot in developing fruit. If the water supply is interrupted, calcium is unable to move to the fruit and rot develops. To prevent blossom end rot, keep the soil uniformly moist, but not saturated.
Do not allow the soil to dry out in between watering. Soil test before planting to ensure there is a sufficient level of calcium in the soil. See the “Watering” section for tips on proper watering.

One of the least expensive and most effective disease control measures is crop rotation. Do not plant after watermelon or similar crops, such as cantaloupe, cucumber, squash, and pumpkins, for at least three years. Overhead watering encourages many plant diseases. Diseases that may become a problem include anthracnose, gummy stem blight, powdery mildew, and nematodes. For more information, please see HGIC 2206 Cucumber, Squash, Melon & Other Cucurbit Diseases, and HGIC 2216, Root-Knot Nematodes in the Vegetable Garden.

Excessive vine growth and few fruit are usually the result of an over-application of nitrogen fertilizer or by planting too close. For more information, refer to the “Fertilizing” section.

Insect problems are usually critical only in the seedling or early growth stage. Cucumber beetles, squash bugs, and aphids are the most harmful insect pests. For more information, please see HGIC 2207 Cucumber, Squash, Melon & Other Cucurbit Insect Pests.