

Home Gardening Series
Watermelons

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Vegetables

Environment

Light – sunny
Soil – well-drained, sandy
Fertility – medium
pH – 6.0 to 7.0
Temperature – hot
Moisture – average

Culture

Planting – transplants or direct seed
after danger of frost
Spacing – hills 6 to 8 feet apart
Hardiness – very tender annual
Fertilizer – heavy feeder

**Watermelon – *Citrullus
lanatus***

Watermelons are indigenous to tropical Africa, where they are found wild on both sides of the equator. They were developed from a native African vine. Their cultivation by man dates back 4,000 years to the ancient Egyptians, as proven by artistic records. Watermelons spread from ancient Egypt to India and Asia and were widely distributed throughout the remainder of the world by Africans and European colonists.

Watermelons are tender, warm-season vegetables. The fruit of the watermelon is one of the largest vegetables we eat. Watermelons commonly weigh 18 to 25 pounds, with the world's record melon tipping the scales at 291 pounds. They can be grown in all parts of Arkansas. Melons are usually planted in the field



around April 15 to May 1 in south Arkansas and between May 10 and 15 in north Arkansas. Watermelons do not transplant well bare-rooted, but they may be started in containers three to four weeks before field planting to promote early development. Mulching with black plastic film also promotes earliness by conserving moisture and warming the soil.

Cultural Practices

Planting Time

Plant after the soil is warm (62 degrees F or greater) and when all danger of frost is past. Hot caps and floating row covers may prove useful for earlier production.

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Cultivars

Crop	Cultivar	Days to Maturity	Seed Per 100 Feet of Row	Disease Resistance or Tolerance	Remarks
Watermelons	Crimson Sweet	85	1/2 oz	Anthracnose, Fusarium wilt 1	
	Jubilee II	90	1/2 oz	Anthracnose, Fusarium wilt 1	
	Star Brite	90	1/2 oz	Anthracnose, Fusarium wilt 1	Oblong, dark green stripes.
	Sweet Favorite	90	1/2 oz	Anthracnose, Fusarium wilt 1	
	Shiny Boy	90	1/2 oz	Anthracnose, Fusarium wilt 1	
	Yellow Baby	85	1/2 oz		
	Triple Crown	88	1/2 oz		
	Moon and Stars	90	1/2 oz		

Planting Location

Watermelons grow best on a deep sandy loam soil high in organic matter, well drained and slightly acidic. Sandy loam soils are preferred for growing watermelons because sandy soils generally warm faster in the spring, are easier to plant and cultivate and allow deep root penetration (watermelon is one of the deepest rooted of all vegetables). When planted on very heavy soils, the plants develop slowly and fruit size and quality are usually inferior. Yields on clay soils can be increased significantly by mulching with black plastic film to conserve moisture. Fine sands produce the highest-quality melons when adequate fertilizer and water are provided. Wind breaks of wheat or rye are advisable on sandy soils to reduce “sand blast” damage and stunting to young seedlings during spring winds. To reduce the risk of diseases, do not plant on land where vine crops have grown during the past four years. Avoid low, damp areas or pockets where cool air may collect. Soil pH can vary from 5.5 to 8.0. Don't be concerned with adjusting soil pH unless it is below 5.8.

Spacing and Depth of Planting

Watermelon vines require a lot of space. Plant seed 1 inch deep in hills spaced 6 feet apart. Allow 7 to 10 feet between rows. After the seedlings are established, thin to the best three plants per hill. For earliness, start the seed inside about three weeks before they are to be set out in the garden. Plant two or more seeds in 3-inch deep pots or peat pots, then thin to the best two plants. Do not start too early; large watermelon plants transplant poorly. Growing transplants inside at warm temperatures ensures germination of seedless varieties that require temperatures between 80 and 85 degrees F. Place black plastic over the row before planting. Use a starter fertilizer solution when transplanting. If you

grow seedless melons, you must also plant a row of a standard seeded variety as a pollinator for every three rows of the seedless melons. The seedless melon varieties do not have the fertile pollen necessary to pollinate and set the fruit.

Care

Watermelons should be kept free from weeds by shallow hoeing and cultivating. The plants are deep rooted, and watering is rarely necessary unless the weather turns dry for a prolonged period early in the growing season.

Insects

Cucumber beetles and squash bugs will attack watermelon plants. Apply a suggested insecticide for control.

Diseases

Anthracnose is a major foliar disease of melons in Arkansas. It is also a common destructive disease of most cucurbits. Use a fungicide to control. Gummy stem blight causes stem end rot, leaf spotting and a fruit rot on all cucurbits. Lesions on leaves, petioles and stems become pale brown or gray. Those on stems elongate into streaks and produce an amber, gummy exudate. The leaves may turn yellow and die. Occasionally, the whole plant wilts and dies. Use a fungicide to control leaf and stem blights.

Mosaic Viruses – Many strains of mosaic viruses infect cucurbits. In Arkansas and in the southern states, certain watermelon strains of a mosaic virus have caused extensive losses of fruits of zucchini and other summer squash, cucumber and pumpkin because of the occurrence of mosaic-patterned, yellow and green, knobby fruits. Plants of cucurbits may become infected at any growth stage.

Pollination

Poor pollination and fruit set can cause low yields. Watermelon has male and female flowers. Male flowers produce the pollen, and the female flowers produce the watermelon fruits. Honeybees and other bees transfer the pollen. After the plant produces many male flowers, every seventh flower on a plant branch is female. All male and most female flowers drop off the plant, and fruits set more or less irregularly throughout the season. The condition of the plant and the number of melons already set determine the number of female flowers that set fruit later. Therefore, pruning misshapen melons while small is essential to encourage additional fruit set.

Flowers open one to two hours after sunrise. Female flowers are receptive to pollen throughout the day, although most pollination takes place before noon. The flowers close in the afternoon never to reopen whether pollinated or not. Bees must deposit adequate pollen on all three lobes of the female flower's stigma or a misshapen melon develops. Cold, rainy and windy weather reduces bee activity, which can cause poor melon production due to inadequate pollination. Even though a melon has normal shape, it will ripen at a smaller size and contain fewer seeds if pollination was marginal.

When flowers are developed on the plants, do not use insecticides, such as carbaryl or Sevin, that are extremely toxic to bees.

Harvesting

Many home gardeners do not know how to determine when watermelons are ripe. Use a combination of the following indicators: 1) light-green, curly tendrils on the stem near the point of attachment to the melon turn brown and dry when the melon is ripe; 2) the surface color of the fruit turns dull; 3) the skin becomes resistant to penetration by the thumbnail and is rough to the touch; and 4) the bottom of the melon (where it lies on the soil) turns from a light green to a yellowish color. These indicators for choosing a ripe watermelon are much more reliable than "thumping" the melon with a knuckle. Many watermelons do not emit the proverbial "dull thud" when ripe.

Common Problems

pests – deer, crows and coyotes

diseases – bacterial wilt (spread by cucumber beetles), fusarium wilt, anthracnose leaf spot, powdery and downy mildews, alternaria blight, gummy stem blight

insects – cucumber beetles, squash vine borer, pickleworms, squash bug

cultural – poor flavor and lack of sweetness due to poor fertility, low potassium, magnesium or boron; cool temperatures; wet weather; poorly adapted variety; loss of leaves from disease or picking melons unripe. Blossom end rot on melons grown on acidic soils with a lack of irrigation. Misshapen melons caused by poor pollination during wet, cool weather

and lack of bee pollinators. Planting too close results in excessive vegetative growth. A heavy rain when melons are ripening may cause some of the fruit to split open. Fruit in contact with soil may develop rotten spots or be damaged by insects on the bottom. Place a board or several inches of light mulching material, such as sawdust or straw, beneath each fruit when it is full-sized.

Harvesting and Storage

days to maturity – 70 to 130

harvest – Become familiar with the variety being grown to determine the best stage for harvesting. The best indicator is a yellowish color on the underside where the melon touches the ground. A dead tendril or curl near the point where the fruit is attached to the vine is used by some as an indicator that the fruit is ready for harvest. You may also thump the fruit, listening for the dull sound of ripe fruit rather than a more metallic sound; however, this technique takes some practice. If you have just a few fruit, it is probably wise to include all of the above when making your decision.

approximate yields (per 10 feet of row) – 8 to 40 pounds

amount to raise per person – 10 to 15 pounds

storage – medium-cool (40 to 50 degrees F), moist (80 to 85 percent relative humidity) conditions

preservation – cool, moist storage

Frequently Asked Questions

- Q. My watermelons are not very sweet and flavorful. Is the low sugar content caused by the watermelons crossing with other vine crops in the garden?**
- A. No. Watermelon varieties will cross with one another, but not with muskmelons, squash, pumpkin or cucumbers. The poor quality of your melons may result from wilting vines, high rainfall, cool weather or late planting.
- Q. What can I do to prevent my watermelons from developing poorly and rotting on the ends?**
- A. This condition may be caused by a combination of factors. It may be caused by an extended period of extremely dry weather when the melons were maturing or by a lack of calcium (soil needs lime). It may be aggravated by continued deep hoeing or close cultivation. Mulching the plants with black plastic film helps reduce this problem, especially on heavy and droughty soils.
- Q. Do watermelons readily cross with other vine crops resulting in off-flavor and poor-quality fruit?**
- A. Watermelon varieties readily cross with each other and with the wild citron. Watermelons will not cross with cantaloupes, cucumbers, pumpkins, squash or cushaws. Off-flavor or odd-shaped fruit is generally caused by growing conditions and not cross-pollination.

Q. What determines the sweet flavor of watermelons?

A. There are differences in sugar content from one variety of watermelon to another. The sweeter varieties include Crimson Sweet, Dixielee and the old variety Black Diamond (if harvested at the proper stage of maturity). Excessive moisture caused by late irrigations or rainfall near maturity of the watermelon will result in poor flavor.

Q. How can you tell when a watermelon is ripe?

A. Determining ripeness in watermelons is difficult. The area touching the soil or the belly of the fruit turns from a light grass-green color to a cream color as the fruit ripens. Thumping is used to check ripeness, but the results will vary. The dark green fruits, such as Black Diamond, will also develop a dull fruit color compared to an immature melon. The tail or tendrils located on the vine connecting the fruit to the plant will dry as the melon matures. If tendrils closest to the fruit are dry and brown, chances are the fruit is mature.

Q. What causes watermelon plants to fail to set fruit?

A. Poor fruit set in watermelons is usually a result of poor pollination. The watermelon plant produces male and female blooms, and bees are necessary to transfer the pollen from the male to female bloom. Common causes of poor fruit set include lack of bees for pollinating or cool, wet weather that slows bee activity during bloom.

Q. What causes the end of the watermelon fruit to turn black and rot?

A. Watermelon fruit is affected by blossom end rot just as tomato fruit. This condition occurs on watermelon fruit if the plant loses excessive moisture through an unusually dry period. The inability of the plant's roots to keep up with water loss by the plant results in desiccation and blackening of the blossom end of the fruit. Prevent blossom end rot by maintaining adequate moisture, especially as the fruit matures.

Q. Are there really seedless varieties of watermelons?

A. Yes. There are several hybrid varieties of watermelons that produce seedless or nearly seedless fruit. A common variety is Jack of Hearts. Since the seeds of this variety are relatively weak, start them indoors in a warm area. When setting the plant out in the garden, also plant a few seed of a standard variety because they provide pollen for fruit set. Seedless melons were created by crossing melons with two different chromosome numbers. A diploid (2X) melon is

crossed with a tetraploid (4X) melon to produce the triploid (3X) seed. This seed germinates and the fruit are pollinated but do not produce viable seed, hence the name "seedless melons."

Q. As my watermelons begin to set fruit, the leaves around the crown of the plant develop necrotic lesions and die rapidly.

A. A number of foliage diseases attack watermelons causing this condition. The one most often observed is anthracnose. Alternaria and downy mildew cause similar lesions. Control all these by using a fungicide. Begin applications at the first sign of the disease and continue at 7- to 14-day intervals as long as weather conditions are favorable for disease development.

Q. As my watermelon plants began to grow, the stem near the crown cracked and oozed an amber-colored liquid. Soon after this the plants died.

A. This is gummy stem blight caused by a soilborne fungus that attacks watermelons, cantaloupes and cucumbers. Control with fungicide sprays when the runners begin to form. Spray the crown of the plant carefully. Crop rotation will decrease this problem.

Q. What is a citron and is it edible?

A. The citron is the wild watermelon, a native vine of Africa. In the arid interior of Africa, it supplies the people with water from its fruit. It is also called a preserving melon because the fruit rind is used to make pickles or preserves.

Q. My watermelon plants grew vigorously. There was slight twisting at the stem end, and the leaves were distorted. Fruit was either not formed or was distorted on these plants.

A. This is watermelon mosaic. It is transmitted by aphids and can be partially prevented by spraying plants on a regular basis. Once the plant becomes infected with the virus, there is no control. Early planting will decrease this problem.

Q. My watermelons were growing and doing well when, all of a sudden, they began to wilt and died soon after. I found the stems have a tan ring on the inside.

A. This is fusarium wilt of watermelon, a soilborne disease. Plant resistant varieties such as Charleston Gray and Jubilee to reduce this problem. There are other wilt-resistant varieties, but consult seed catalogs before planting varieties other than the two mentioned. There is no chemical control for this disease.

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