

How to Plant Spring and Summer Mirliton Sprouts, Revised 2018

Mirlitons (*Sechium edule*) in the United States south have two fruiting seasons that begin after the spring and fall equinox, which generally means flowering begins in May for several weeks and again in October until December. The plant initiates flowering in response to leaf signals when leaves detect equal periods of light and darkness (photoperiodism). This stimulus is combined with temperature changes (thermoperiodism) in the fall: a cold snap after the equinox can help stimulate flowering. Spring crops are normally much smaller than the fall crop.

In 2012 South Louisiana had an unusually warm winter; New Orleans never experienced sub-freezing weather, so many mirliton vines that had not been pruned to the ground at the end of the fall season began flowering as early as February and new plants that were either planted as sprouts in the fall or overwintered in containers and transplanted into the ground in April were also flowering and bearing fruit in March and April. This early crop has created an opportunity to use the winter/spring fruit for seed.

Needless to say, use only locally grown mirlitons and not imported grocery store “chayote” which, because of altitude differences, are very difficult to successfully grow in the U.S., though they will sprout and initially vine like a locally-grown variety. Normally they succumb to the higher Ultraviolet light waves that damage the leaf’s photosynthesis system—or they will fail to flower properly.

Spring fruit can be used as seed but must be planted using special methods. The goal is to get the sprouts into the ground as soon as possible so they can develop a root structure sufficient to meet the water needs of the top growth when temperatures reach the 90 °F as early as May. Unlike containerized plants or seeds that were planted the previous fall, these sprouts begin the summer with no root structure.

Spring fruit should be allowed to mature for at least three weeks on the vine and meet the “thumbnail test”: press your thumbnail into the skin and if the fruit flesh is soft and the nail leaves a dent, then the fruit is not ready to pick. Also if you are familiar with the heirloom variety that you are growing, you will know the average size of a mature fruit. The fruit must be mature to be able to germinate and sprout.

Cool Weather Planting of Sprouts:

Once picked, move the fruit out of direct sun and move to a warm area with a constant temperature of at least 75-80°F to encourage sprouting. In a sense, you are “incubating” the

fruit since cooler outside temperatures induce a period of dormancy and prevent sprouting. One method is to place the mirlitons in a plastic tub or cardboard box with a small light to keep the air warm or place the tub/box where it gets some direct sun on the side for solar warming, but leave the top open for indirect light to prevent mold growth. Mirlitons can be sprouted outside in shade, but the cooler evening temperatures may slow down germination. If storing outside, use wire cloth or netting to protect the seed from pests that particular enjoy eating the new sprouts. Normally the fruit will begin to sprout with 14 days. Sprouting is defined by the internal seed pushing its way to the large end of the seed (apical cleft) until a small green shoot emerges. As soon as that shoot emerges, the fruit can be planted. The shoot should only be a few inches long. If the shoot has grown several inches, prune back to the first node. Long shoots make it more likely that the shoot will break off at the base during planting and once broken at the seed, shoots do not regrow.



Mirliton fruit sprouting. The seed and shoot are emerging. This is the best time to plant.

In this rare “winter mirliton” season, the seed should be planted as indicated in the growers guide and the www.Mirliton.Org photo sites: planted “shooting end down” at a 45-degree

angle with at least half the fruit above ground level. Cover with a milk crate or wire to protect from squirrels until the first shoot begins to emerge from the ground. This “above ground” method can only be done when temperatures are under 85 °F.



Surface planting of sprout. Large, shooting end down. This is the normal planting method unless the temperatures are above 90°F

Hot Weather Planting of Sprouts:

But during normal flowering cycles, the spring mirliton flowers will not appear until May 1st, and the fruit will not be ready to pick until late May and won't sprout until June or later. This seed can be planted, but temperatures over 90°F. will suppress shoot and root development and dehydrate the seed fruit that is exposed to sun. We have tested June sprout plantings and discovered that the shoot stays below ground and winds in a circle if the fruit is directly exposed to sunlight.



Mirliton sprout that was planted with fruit above soil line in intense heat. Shoots coiled under the seed and did not surface (here the shoot is white)

So sprout-planting in May and June should be done by placing the sprout on its side and covering it with two inches of soil to protect it from direct sun. Since planting this late in the season makes it more difficult for the plant to survive, (mirlitons need at least 120 days from planting to bear mature fruit) we recommend planting at least three sprouts in the same hole. Mirlitons tolerate crowding well and if all three vines make it through the summer, than two can be pruned out or, if you have adequate root space and trellis space, all three can be retained. See the growers guides for root space requirements:

As always, given the higher frequency of “intensive rain days,” it is a waste of seed and time not to plant sprouts in a large hill system (6-9 cubic feet of soil) and use a high-quality, fast-draining and high air-porosity growing media such as commercially produced potting mix. Raised beds need be elevated off the ground if they are sitting on top of saturated soil that blocks drainage or must have artificial subsurface drainage systems (see below).

A spring/summer sprout planting will produce fruit in the fall, though it may be far less than the average of 30-40. However, the plant will develop an expanded root structure and can be pruned back in the fall before a hard frost and will produce the next year—doubling the yield every year for the first three years. The main reason plants stop producing after a few years is because of root-knot nematode infestation. We recommend that if you want to control root-knot nematodes that you treat your plant in the spring and fall with beneficial nematodes that are referenced in the growers guide.

All photos on sprouts and incubation are in photo section of www.mirliton.org

Lance Hill

Mirlitons.org

Lance@mirlitons.org