Growing Carrots for Seed Saving

Carrots are easy to grow. Each plant takes up less space than that for many other vegetables, so even small gardens can produce a lot of carrots. They continue to grow even in hot weather as long as they have adequate moisture.

The tiny carrot seeds require a long time to germinate (sprout), especially in cool weather. They must be covered only very lightly with soil, so it is challenging to maintain moisture until they germinate. When they come up, they look like tiny grass blades.

A weed called wild carrot or Queen Anne's Lace will cross-pollinate with garden carrots. The flower looks exactly like a carrot flower, and the plant smells carroty, but the root is not very good to eat (but perfectly safe to do so). If carrots are grown from seeds that were cross-pollinated with Queen Anne's Lace, the roots would probably be more like the wild variety than the cultivated one.

Carrots are biennial. They flower and set seeds the second year after planting. Carrots for seed saving should not be grown within 400 m of wild carrot or any other variety of carrot the second year, when the plants are in flower. Sometimes a carrot plant will bloom the first year. Don't save seeds from these.

Carrots in flower.

Preparing the Garden

Carrots need loose, light soil that is free of rocks. Heavy clay soil can result in carrots that are misshapen, forked, or stunted. Dig the soil 30 cm (1 foot) deep and remove weeds. Amend the soil with compost and dig it in. As with many vegetables, carrots should be grown in soil that is slightly acidic. Rake the bed until it is smooth. The small seeds need good contact with the soil – fine textured soil is better for this. Water thoroughly so the bottom layers of soil are moist.

Planting

Carrots are cold-tolerant, so plant them in April or early May. If you are growing more than one variety, make sure you put a label on each. Also make a map of the location of each variety. Remember that only one variety should be overwintered for seed saving the following year.

- Carrot rows should be spaced at least 30 cm (12") apart and plants should be spaced 2-3 cm (1") in the row.
- With a hoe, make a row about 2-3 cm deep. This shallow trench will help retain moisture when the seeds are germinating.
- Sprinkle the seeds thinly in the row – about 10-15 seeds per 30 cm (1 foot).
- Cover the seeds with soil so they are no more than 0.7 cm (¼") deep.
- Tamp the soil over the seeds.
- To help prevent the seeds from drying out, put row cover over the bed or lay 2x4 boards on top of the seed row.
- Check every few days for signs of germination. When you see the first tiny plants that look like grass, remove the cover.
- When the plants are 5 to 10 cm tall, mulch them with straw or other material to help keep weeds down and maintain moisture.

Watering

Use a fine spray and water several times a day to keep the seeds continually moist while the seeds are germinating and the plants are small. Carrots should not be allowed to dry out even when they are nearing maturity. Drip irrigation on a timer works well for this.

Thinning

Carrots should be thinned to prevent crooked roots and poor development. When the plants are 4-5 cm (2 inches) tall, thin them to about 2-3 cm apart. Thinning is labour-intensive, but worth the effort. And you can weed the row at the same time.

Pests and Diseases

Pests can include nematodes (a type of worm), carrot rust fly larvae, wireworms, and sometimes slugs. Common diseases are caused by viruses, bacteria, and fungi. They can affect the foliage and the root. Many of the pests and diseases affecting carrots are difficult to control. Good garden sanitation, rotation of crops, irrigation below foliage, and immediate removal of

unhealthy plants will help to keep your carrot crop productive. Use row cover to ward off insect pests. Plant companion types like leeks to help deter pests.

Seed Saving

Carrots require exposure to temperatures below 10^{o}C for about 10 weeks to flower and produce seeds. Carrots can withstand temperatures down to -9^{o}C, so they could be mulched heavily and left in the garden over winter. If you have problems with carrot rust fly or rodents, however, you will need to dig the carrots up and store them. It is beneficial to do this anyway, so the roots can be evaluated. Save only those that are straight, characteristic of the variety, and healthy looking. A minimum of 20 plants will be needed for saving seeds, so mulch or dig up at least 30, as some will not survive storage.

To overwinter carrots in storage, carefully dig them up before the first hard frost. Try to dig them when the soil is relatively dry, and then you can shake or gently brush the roots to remove as much soil as possible. Do not wash them. Lay them on the garden in the sun or spread them out under cover for a few hours to toughen the skin. Turn them once so all sides can dry. Trim off the tops to about 2 cm above the crown. Discard any that don't look true to type or are diseased or misshapen.

You can store the roots in a perforated plastic bag in a refrigerator. Or, put wood shavings, sand, shredded newspaper, or dry leaves in the bottom of a plastic bin and put a layer of carrots on top. Continue alternating carrots and storage medium, ending with the medium on top. Put the bin lid loosely on the bin so air can get in.

The optimal storage temperature is 2 to 3 degrees C, with high humidity. A root cellar, garage, or unheated enclosed porch would be ideal. The roots can remain viable for 4 to 6 months if conditions are optimal. Check the carrots in storage periodically for rot (too wet) or softening (too dry). Correct these issues to maintain viable roots.

In the spring, dig a deep trench and plant the roots 30 cm (1 foot) apart in the row, with rows 1 m (3 feet) apart. The top of the carrot should be just above the soil surface. If the carrots are very long, cut off the bottom third of the root, but let the cut ends scar over for a day before planting.

Carrot flower head.

The flower stalks can get 1.5 m (5 feet) tall, so staking might be required. The flowers are very attractive to pollinators. The umbrella-like flower head is called an *umbel.* It is composed of smaller umbels of numerous flowers. As the seeds form, the petals fall off. The seeds are tiny and packed together on each umbel. Carrot seed heads mature sequentially, so they cannot be harvested all at once.

Harvesting

The seed heads are dry and brown when mature and detach easily from the plant. They look rather like a bird's nest. They can be harvested individually over a couple of weeks. The heads should then be put in a well-ventilated spot protected from rain, to dry for two or three weeks more.

Carrot seed head.

Seed Cleaning

Threshing carrot seeds is easy, but tedious. The umbels can be rubbed between one's hands or against a fine mesh screen. Or, use an old toothbrush to dislodge the seeds. This method results in fewer dry flower stems among the seeds.

Carrot seeds have appendages called *awns* that can be difficult to remove, especially if the seeds are not thoroughly dry. The purpose of awns is to enhance seed dispersal, as they stick to animal fur. They can be removed by rubbing the seeds between gloved hands. Wear a mask so you don't inhale small particles of chaff.

After threshing, the seeds can be screened through 2 to 6 mm mesh, and then winnowed in wind or a fan. It is not necessary to remove all the chaff.

Record Keeping

Fill out an evaluation form for each variety. This information will help us decide which varieties should continue to be grown for the seed bank. If you keep a journal with notes on gardening activities, you will be able to remember when each variety was planted, how it grew, and whether you liked it.

Storage

Store seed bank seeds and your own in a paper envelope in a cool, dry place. Very dry seeds will last for years if you put the envelope in a jar with a tight lid and then in the refrigerator. Be sure to label the envelope with the variety and year. For seeds that are donated back to the seed bank, put the variety (like Scarlet Nantes), the type (carrot), the year, and your name on the envelope.

References

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