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# FROM SEED TO SEED

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Educational films on seed production



## RADISH

The radish is a member of the Brassicaceae family and the *Raphanus sativus* species. There are small radishes (*Raphanus sativus sativus*) and large radishes (*Raphanus sativus niger*) with summer, autumn and winter varieties. The small radishes are mainly white, pink or red. There are also yellow, gray, purple or black varieties with more or less elongated roots. The large radishes are white, pink, purple or black with round or elongated roots of different lengths.

### ► Pollination

Radish flowers are hermaphrodite, which means that they have both male and female organs. Most are self-sterile: the pollen from the flowers of one plant can only fertilize another plant. In order to ensure good pollination it is better to grow several plants. The plants are therefore allogamous. Insects are the vectors of pollination. Radish flowers are white or purple. They produce nectar and attract many bees.

Cross pollination is possible between all varieties of radish, even between the two sub-species, *sativus* and *niger*. To preserve the purity of the variety, two different varieties should be planted at least 1 km apart. This distance can be reduced to 500 m if there is a natural barrier such as a hedge between the two varieties. The varieties can also be isolated by alternately opening and closing mosquito nets or by placing small hives with insects inside a closed mosquito net (for this technique, see the module on isolation

techniques in 'The ABC of seed production?').

## ▶ Life cycle of the radish

Small radishes are annual plants. If you sow early (in March or April) you will be able to harvest mature seeds at the end of summer. To select 15 to 20 plants for seed, pull out 50 to 100 radishes so that you can examine them closely. The selected radishes are replanted entirely under the ground, 25 cm apart with a distance of 30 cm between rows. They are then watered well. Large radishes are biennial plants. To produce seed, they are sown in the summer. They will have to pass the winter and then flower and form seeds the following year. At the end of autumn, the large radishes are dug up and selected.

Seeds are produced by healthy radish plants that have been observed throughout the period of growth for all characteristics: size, colour, vigour, rapid growth, resistance to disease and to bolting too early, tender flesh without any holes, mild or strong.

The leaves are cut without damaging the collar and are then stored in damp sand or in plastic conservation bags. They will overwinter in a cellar or a cool place safe from frost. Throughout the winter you should regularly check the roots and eliminate those that rot.

In spring, the radishes are replanted in the garden 25 cm apart with a distance of 30 cm between rows and then watered well. Since plants for seed can reach a height of up to 2 m, stakes may be needed.

The seeds are mature when the seed pods turn beige. Generally, the stems do not mature at the same time. To avoid wasting any seed, harvesting can take place gradually as each stem matures. The entire plant can also be harvested before all seed has completely matured. The ripening process is completed by placing them in a dry, well-ventilated place.

## ▶ Extracting - sorting - storing

The radish seeds are ready to be removed when the seed pods can be easily opened by hand. To extract the seeds, you can crush the seed pods with a rolling pin. You can also put the seed pods in a bag and beat them against a soft surface. Larger quantities can be threshed by walking on them or even driving over them with a vehicle. Seed pods that are difficult to open probably contain immature seeds that will not germinate well.

To sort the seeds, the chaff is removed by first passing the seeds through a coarse sieve that retains the chaff, and then by passing them through another sieve that retains the seeds but allows smaller particles to fall through. Finally, they should be winnowed by blowing on them or with the help of the wind so that any remaining chaff is removed.

Always include a label with the name of the variety, the species and the year in the bag as writing on the outside can be rubbed off. Storing the seeds in the freezer for several days eliminates any parasites.

Radish seeds are able to germinate for 5 to 10 years. This can be prolonged by storing the seeds in a freezer.

*Longo mai*

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