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# FROM SEED TO SEED

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Educational films on seed production



## PARSNIP

Parsnips belong to the Apiaceae family and the *Pastinaca sativa* species. It is a biennial plant grown for its root. Parsnips are mainly white in colour but there are different varieties adapted to various soil and climate conditions.

### ▶ Pollination

The flower head of the parsnip is an umbel composed of small flowers that are usually hermaphrodite. The stamen, the male sexual organ, matures before the pistil, the female sexual organ.

Self-fertilization does not therefore occur within the same flower. Yet since the flowers do not bloom at the same time, self-fertilization is possible within the same umbel or between two umbels on the same plant. Fertilization also occurs between the umbels of different plants.

The parsnip is an allogamous plant primarily pollinated by insects, in particular insects from the Diptera and Lepidoptera species as well as by ladybugs, which are attracted to umbels that are often covered with aphids. Parsnips can cross with wild parsnips. To avoid cross-pollination, two varieties of parsnip should be grown 300 meters apart. This distance can be reduced to 100 meters if a natural barrier such as a hedge exists between them.

To isolate varieties you can either cover two varieties with different nets, open one while the other is closed on one day and alternate the next, or you can permanently cover one variety with an insect net and put a bumble bee hive inside (for more information, see the module on isolation techniques in 'The ABC of seed production').

## ▶ Life cycle

Parsnips grown for seed production are grown in the same way as those for consumption, but they will only produce their seeds in the second year of the cycle. It may take a long time for seeds to germinate at the start of the season – around three weeks.

Once they have developed, different methods exist for the winter storing of parsnips intended for seed production. It is possible to dig up the roots in autumn. They should be selected for characteristics specific to the variety: colour, shape, vigour. The roots are cleaned without water and the leaves are cut above the collar. They are then left to dry a short while in the open air. You should then store them in the cellar. During the winter you should regularly check them and remove those that have begun to rot.

The easiest is to leave them in the ground in the garden. The parsnip is one of the hardiest plants and can stay in the ground in winter even in very cold regions. Its flavour is even improved by frost. After the worst of the cold has passed, you should uproot them and select those intended for seed production. Replant the roots at the beginning of spring. Bury them so that the collar is either at ground level or slightly below with a distance of 60 to 90 cm between each plant. It would seem that planting parsnips close to each other reduces the number of tertiary umbels, whose seeds are of poor quality.

A minimum of fifteen to twenty plants is necessary to maintain good genetic diversity. Parsnips grown for seed are magnificent plants that can reach a height of two meters in good years. It is sometimes necessary to stake them.

The parsnip produces several umbels that bloom at different times. The first, the primary umbel, is found at the tip of the main stem. The secondary umbels are those that develop from the main stem. The tertiary umbels form on the secondary stems. It is preferable to harvest the primary umbels because they produce the best seeds. The secondary umbels should be harvested only if necessary.

The umbels are cut along with the top of the stalk when the first mature seeds begin to fall. You can also cut them earlier as they tend to fall very easily to the ground. In any case, they should continue to dry in a well ventilated and dry place.

## ▶ Extracting - sorting - storing

The seeds are removed from the umbels by hand. You should wear gloves because the seeds release essential oils that may cause blisters in direct sunlight. To clean the seeds, you should first use coarse mesh sieves that retain the chaff. You then use a finer sieve that will retain the seeds but let the dust pass through.

Always put a label with the name of the variety and species, as well as the year, inside the package, as writing on the outside may rub off. Storing the seeds in the freezer for several days kills parasite larvae.

Parsnip seeds only have a germination capacity of one year, but this can be prolonged by storing them in the freezer. One gram of seed contains around 220 individual seeds.

*Longo mai*

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