

FROM SEED TO SEED

Educational films on seed production



KOHLRABI

Kohlrabi is a member of the Brassicaceae family, the *Brassica oleracea* species and the *caulorapa gongylodes* subspecies. The *brassica oleracea* species also includes broccoli, cabbage, Brussels sprouts, kale, cauliflower and the Savoy Cabbage.

Kohlrabi is a biennial plant grown for its swollen stem. The plants produce very few leaves and its flesh remains tender. There are different varieties distinguished by the size and colour of the stem. There are early varieties and varieties for storage.

▶ Pollination of all the cabbages of all the Oleraceae species

The flowers of the *Brassica oleracea* species are hermaphrodite which means that they have both male and female organs. Most of them are self-sterile: the pollen from the flowers of one plant can only fertilize another plant. The plants are therefore allogamous. In order to ensure good pollination it is better to grow several plants.

Insects are the vectors of pollination. These characteristics ensure great natural genetic diversity. All of the cabbage sub-species of the *Brassica oleracea* species can cross with each other. You should therefore not grow different kinds of cabbage for seeds close to each other.

To ensure purity, different varieties of the Brassica oleracea species should be planted at least 1 km apart. This distance can be reduced to 500 meters if there is a natural barrier such as a hedge between the two varieties. The varieties can also be isolated by placing small hives with insects inside a closed mosquito net or by alternately opening and closing mosquito nets. For this technique, see the module on isolation techniques in 'The ABC of seed production'.

▶ Life cycle of the kohlrabi

In the first year of cultivation, plants of storage varieties grown for seed are cultivated in the same way as those for consumption.

In the first year, they form swollen stems that have to overwinter and then flower the following year. Stems that are over-developed or split at the end of autumn will be difficult to overwinter. In most regions, you should therefore sow both early and storage varieties in June or July.

To ensure good genetic diversity, you should select 30 kohlrabi plants in autumn in order to obtain 10 to 15 plants in spring. Producing kohlrabi seed requires healthy plants that have been observed throughout the growth period to identify the characteristics of the variety: the quality of the stem, vigour and rapid growth, resistance to diseases, good storage capacity, precocity, resistance to cold.

The plants intended for seed production can be stored in a cellar; you should cut off the side leaves but leave the central ones. The plants are then placed in sand or in containers. During winter kohlrabi is less likely to rot than cabbages.

In regions with a mild climate, kohlrabi can remain in the ground since it can tolerate frosts as low as -7° C. A dry winter is the best and stems with less water content are more resistant to the rigours of winter.

In spring when the danger of a heavy frost is past, take out the kohlrabi from their place of storage and replant them in the ground, burying 2/3 of their volume. The kohlrabi will grow flower stalks and then flower. To avoid them falling, it is sometimes necessary to support the flower stalks with stakes.

▶ Extracting - sorting - storing of all the Oleraceae species

The seeds are mature when the seed pods turn beige. The seed pods are very dehiscent, which means that they open very easily when mature and disperse their seed. Most of the time, the stalks do not all mature at the same time. To avoid wasting any seed, harvesting can take place as each stalk matures. The entire plant can also be harvested before all of the seeds have completely matured. The ripening process is then completed by drying them in a dry, well-ventilated place. Cabbage seeds are ready to be removed when the seed pods can be easily opened by hand.

To extract the seeds, the seed pods are spread across a plastic sheet or thick piece of fabric and then beaten or rubbed together by hand. You can also put them in a bag and beat them against a soft surface. Larger quantities can be threshed by walking or driving on them. Seed pods that do not open easily probably contain immature seeds that will not germinate well. During sorting, 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, you should winnow them by blowing on them or with the help of the wind so that any remaining chaff is removed.

All seeds from the Brassica oleracea species resemble one another. It is very difficult to distinguish between, for example, cabbage and cauliflower seeds. This is why it is important to label the plants and then the extracted seeds with the name of the species, the variety and the year of cultivation. Storing the seeds in the freezer for several days eliminates any parasites.

Cabbage seeds are able to germinate up to 5 years. However, they may retain this capacity up to 10 years. This can be prolonged by storing them in the freezer. One gram contains 250 to 300 seeds depending on the variety.

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