

FROM SEED TO SEED

Educational films on seed production



BRUSSELS SPROUT

The Brussels sprout is a member of the Brassicaceae family, the *Brassica oleracea* species and the *gemmifera* subspecies. The *brassica oleracea* species also includes kohlrabi, broccoli, cabbage, kale, cauliflower and the Savoy Cabbage. Brussels sprouts are an autumn and winter vegetable in regions with a cold, temperate climate. They form small sprouts at the base of the leaves and can endure very low temperatures.

► 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 Brussels Sprout

The Brussels sprout is a biennial plant. It will produce its edible sprouts in autumn and winter. It will form its flower stalks in the following spring. Plants for seed are grown in the same way as those for consumption. They are sown in May or June. You should select 15 plants for seed production to ensure good genetic diversity. Seeds are saved from healthy plants that have been observed throughout the period of growth. This enables you to check all of the characteristics of the variety, such as the formation of regular sprouts along the entire stem, the compactness, colour and shape of the sprouts, their taste (no bitterness), resistance to the cold, yield, and the size of the plant.

Plants can reach a height of 60 to 80 cm in the first year. In autumn, the sprouts along the stalk can be harvested, but the sprouts at the top must never be removed. The Brussels sprout is more resistant to cold than large cabbages, and winter varieties can remain in the ground throughout the winter. If necessary, they can be protected with a frost blanket.

In the second year, the stalks can reach a height of one and a half meters. To avoid them falling, it is sometimes necessary to support the flower stalks with stakes. The top of the stem can be cut to accelerate the flowering process.

► 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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