

FROM SEED TO SEED

Educational films on seed production



TERMESSZ SAJÁT TÖK- ÉS CUKKINIMAGOT

Both squash and zucchini, or courgette, belong to the Cucurbitacea family. Most are annual plants that are divided into several species:

- The Cucurbita pepo species includes zucchinis, pattypan squashes, oil squashes and several ornamental squashes. Most are bushy, the leaves are prickly and are often deeply cut. The stalks are also prickly. The seeds are curved, of a uniform greyish white colour and they have a white margin.
- Cucurbita maxima includes wild specimens which can be found in Argentina and Bolivia. It is a species with long but not very firm hairy vines that run along the ground. The leaves are big and hairy, they are never deeply cut and have round lobes. The fruit peduncle is also always round and looks similar to cork. It often splits and it is much thicker than the stem. The seeds are often covered by a membrane that is easy to remove. They are oval and often swollen.
- Cucurbita moshata is a species in which all plants run along the ground. They have very long and hairy zig-zag shaped vines. Their leaves are often spotted with white, have pointed tips and slight indentations along the sides. The peduncle is hard, hairy and slightly angular. The seeds are beige, oblong, and have a dark beige margin. This species needs higher temperatures than other squashes. The fruit do not always mature fully in cold climates.

Pollination

Squashes are monoecious plants, meaning that they have both male and female flowers on the same plant. The female flowers have an ovary below the petals. It looks like a mini squash and will later develop. The male flowers are at the end of long stems. The flowers open for one day only.

The squash can be self-fertilised, meaning that the female flowers can be fertilised by pollen from a male flower on the same plant. However, cross-pollination is more common between different plants of the same variety and within the same species. Insects and above all bees pollinate squash flowers. The only inter-species cross fertilisation, also called inter-specifics, happens between *Cucurbita argyrosperma* and *Cucurbita moschata*. It happens only rarely with a wild *Cucurbita pepo*. It is therefore generally possible to grow two species of squash next to each other without there being a risk of cross-pollination. It is, on the other hand, important to separate two varieties from the same species by a distance of 1km. This can be reduced to 500m if there is a natural barrier such as a hedge. There are several methods to produce seeds from different varieties of squash grown in the same garden.

The first is to cover one variety with a mosquito net and to place a bumblebee hive inside. But this is difficult with the running varieties, as they rapidly fill up all of the space and prevent the insects from moving around easily.

Another method is to cover two varieties with two different net cages : open one while the other is closed on one day, and the other way round the next day. Let the wild insects do their work.

It is also possible to pollinate the flowers manually. It is relatively simple to do this, as the flowers are big and visible. These three methods are explained in greater detail in the modules on mechanical isolation techniques and on manual pollination in the ABC of seed production.

Life cycle

Squashes grown for seed are cultivated in the same way as those for consumption. Keep at least 6 plants to ensure good genetic diversity. Ideally, grow a dozen.

Take great care to select the plants you keep for seeds according to the specific characteristics of the variety, for example whether it is running or not. Check the shape and size of the fruit, the taste and texture of its flesh. Whether it has a good storing capacity. Also check its resistance to diseases.

A squash grown for seed is mature at the same time as squashes for consumption which are generally eaten when they are fully ripe. Exceptions are certain varieties of the *Cucurbita pepo* species, such as pattypan squashes and zucchinis which are eaten before they are mature. Let the zucchini, like the squash, ripen until its colour has changed, that it has attained its full size, that the peduncle is dry and hard, and in the case of zucchinis that its skin is hard.

You can then harvest them, place them in a warm place and let them ripen at least one month. With this technique the seeds' fertility will be increased.

► **Extracting - sorting - storing**

To extract the seeds, open the squash, and remove the seeds using a spoon. Avoid taking too much flesh. Rinse with water. With certain varieties it is difficult to separate the seeds from the flesh. In this case soak the seeds and flesh in water at room temperature and remove the seeds the following day.

Dry the seeds at a temperature between 22 and 25°C in a well ventilated area. To make sure the seed is dry, try to fold it. If it breaks it is dry enough.

Put a label with the name of the species and variety, as well as the year, inside the package, as writing on the outside may rub off. It is best to put the seeds in the freezer for a few days to kill unwanted parasites.

Squash and zucchini seeds have an average germination capacity of 6 years, but this can also last for 10 years. You can increase this by storing the seeds in a freezer.

Longo mai

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