

FROM SEED TO SEED

Educational films on seed production



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Chicory is a member of the Asteraceae family. It is a biennial plant consisting of two species: *Cichorium endivia* and *Cichorium intybus*.

Cichorium endivia can be divided into two major subspecies grown for their leaves: curly endive, of the *crispa* type and escarole, of the *latifolia* type with whole leaves.

The second species *Cichorium intybus* includes bitter chicories of the *foliosum* type, with large red, variegated or green leaves. Chicory of the *sativum* type that produce Belgian endives or varieties from whose roots sugar is extracted or whose roots are roasted as a coffee substitute. The species *intybus* also includes the wild chicories of Europe.

► Pollination

The inflorescence of chicories is composed of florets ranging in colour from blue to blue-violet, it is called a capitulum. The florets of both species are hermaphrodite. *Cichorium endivia* florets are self-pollinating but tend to be allogamous. They therefore do not need insects to be fertilised. *Cichorium intybus* florets, however, are self-sterile, so they do need pollinating insects.

The varieties within each species tend to cross-pollinate thanks to the presence of insects. Because of the characteristics specific to each species, *Cichorium endivia* can also pollinate *Cichorium intybus*, but the contrary is impossible. To avoid cross-pollination, two varieties of chicory should be grown at least 500 meters apart. This distance can be reduced to 250

meters if a natural barrier such as a hedge exists between them.

Cichorium endivia varieties can be grown under permanent mosquito net cages to avoid crossing because they are self-pollinating. With cichorium intybus, use the technique of alternately opening and closing net cages presented in the isolation techniques module in ?The ABC of seed production?.

Nevertheless, it is important to ensure that no escarole, curly endive or wild chicory plants are growing nearby because they could cross with the plants for seed.

Life cycle

Chicory is a biennial plant. It only produces seed in the second year. In the first year of the cycle, chicory plants for seed production are grown in the same way as those for consumption.

Take great care to select plants corresponding to specific characteristics of the variety such as shape, size, leaf colour and a well-formed head. For Belgian endives, select well-developed roots as well as well-shaped and tight heads.

Chicory plants that go to seed in the first year and do not complete a normal cycle of development must be removed. In the next few years, they would tend to go to seed earlier and earlier, which is not what you want from leafy vegetables.

10 to 15 plants for seed are necessary to maintain good genetic diversity.

In autumn, the leaves are harvested for salad and the roots are kept for seed.

In regions with a mild climate, the chicory roots can remain in the ground during winter. In regions where the climate is harsh, there are several methods for overwintering plants for seed. First, the roots can be dug up before winter, trimmed several centimeters above the collar and stored either in moist sand or in pots in a cellar. The ideal humidity rate is 80% and the temperature should be between 0 and 4°C.

Chicory can also be sown late in autumn in a cold greenhouse or outside in a mild climate. If it has formed small rosettes by the onset of winter, it will be more resistant to frost. They form a head in spring and flower in summer. In spring, the roots that were stored in the cellar are replanted in the garden. Roots that have rotted are removed. After replanting water copiously. They will flower gradually and produce very high flower stalks that should be staked.

Chicory seed should be harvested as they mature, which can take a long time. Don't wait to harvest the seeds until the plant is completely dry or else the majority of the seeds will have fallen. The entire head can also be harvested. The seeds will finish maturing on the harvested plant. In any case, the seeds should finish drying in a dry, well-ventilated place.

Extracting - sorting - storing

The plants should be completely dry when the seed is extracted. Chicory seeds are often difficult to remove from their small hull but sometimes they fall easily to the ground. The dry seed pods are vigorously rubbed by hand or beaten with a stick. If the seeds remain in their hulls, other mechanical methods such as rolling pins, tractor wheels or a hammer can be used. Another technique can be used to extract seeds from pods that do not want to open. Seeds can be run through a coffee or herb grinder for several seconds, with astonishing results, but watch out, not too long or else the seeds will be reduced to powder.

Mesh sieves of different sizes are used to sort the seed and get rid of twigs, stems, and dust. Finally, the seeds should be winnowed to remove any remaining debris. Blow gently on the seeds over a plate or a winnowing basket.

The dry seeds are then poured into a waterproof bag. Put a label with the name of the species, the variety, as well as the year of production inside the packet. Storing the seeds in the freezer for several days kills parasite larvae.

Chicory seeds are able to germinate for at least 5 years on average. This period of time can be lengthened if the seeds are stored in a freezer.

Longo mai

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