

Seed Saving Guideline No. 18

Brassicas

Broccoli, Brussels sprouts, Cabbage, Cauliflower, Kale, Kohlrabi, Swede, Turnip

Brassica oleracea & *B. napus*

Family: *Brassicaceae* (*Cruciferae*)

Although they appear diverse, all brassicas have been selected from just two common ancestor species: *Brassica oleracea* has given rise to broccoli, Brussels sprouts, cabbage, cauliflower and kale; *Brassica napus* is the original species of turnip and, possibly, swede. Within species, each will readily cross with another, so must be isolated. They are biennial, being sown and grown one year to flower and seed the next.

Brassica flowers are perfect but are outbreeding, so require insects for seed set.

Growing & Roguing

General

- The plants are sown and grown as for a food crop. They should be spaced more widely as the seed stalks are tall and branched, reaching up to 180cm in height.
 - Brassicas are outbreeders, so as many plants as possible should be used to maintain health and diversity. We recommend a minimum of 24 plants, ideally 100 plants of each variety, though this number is not practical for most home seed savers.
 - Thinning alternate plants for eating will ensure enough space between most leafy brassicas – about 1m each way.
 - Roguing is essential. Most older brassicas are very variable and plants that differ too much from the norm should be removed before they come into flower. Rogue frequently as the characteristics of the plants change as they develop.
 - Roguing may leave a few gaps, but these are easily filled if plants are moved early in spring after over-wintering in the open. There will be little check to growth if the plants are thoroughly firmed in and watered.
 - They are best grown in a block as this makes caging much easier. You can move mature plants to a special seed production area to fit in with a rotation, or to make room for crops that are to follow. Root brassicas should be stored over winter and the best roots replanted at a spacing of about 1m.
 - Growing plants in a block (if you have the space) enables you to discard seed from the outer row or rows if you think there may have been crossing. Bees do not carry pollen far within a block of brassicas so the central plants are likely to be pollinated by their neighbours rather than by plants from far away. Seed from the central four plants in a block of 36 can be stored separately with even more confidence that the variety has been kept pure, while seed from other plants may carry the risk of contamination.
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- Remove dead leaves as they can wrap around the flowering stalks and promote fungal growth. In the case of cabbages, particularly the tight headed varieties, you may need to cut a cross into the head or remove a large amount of the leaves to allow space for the flower stalk to grow through.

Spring Cabbage

The heads can be cut and used, letting the flower stalks shoot from the stump. If you don't use the head there is potential for it to rot; you will need to cut a cross in it to allow the flower stalk to emerge.

Cauliflower

Winter and early summer varieties should flower in the same year and cause few problems. Autumn varieties are more difficult to obtain seed from, as the plants will need to over-winter.

Brussels Sprout

These can be left *in situ*. The lower buttons and top head can be eaten.

Turnip and Swede

Protect with straw in extreme cold when over-wintering. Turnip varieties may flower in the same year of sown early. Discard any plants that bolt early.

Pollination & Isolation

Cross-pollination seldom occurs over distances of more than 1500m, so isolation by distance is a possibility. The risk usually comes from neglectful gardeners nearby who allow their previous year's crops to flower, and from oilseed rape that can cross with *B. napus*. As well as its widespread growth as in agriculture, this can often spread to roadside verges and hedgerows.

The best seed set is obtained in the open. If there are too many potential contaminant brassicas growing nearby, you can introduce flies as pollinators inside a cage. Buy maggots from an angling shop (buy whites) put them somewhere warm to turn into pupae (or castors), then add them to your cage before they turn into flies. Make sure the shop knows how you intend to use them as they are sometimes treated so that they do not hatch.



Pollinator on turnip flowers

They will need to be protected from the rain but free to fly when they hatch. An old lidded margarine tub with a hole cut in the side works well. Being enclosed in the isolation tent their forays will be limited to the brassica flowers, thus ensuring varietal purity. As flies are not very effective pollinators of brassicas this is not ideal, and seed set is around 40%.

Alternate day caging is a good method of maintaining purity of two varieties in a single season, provided that there are no local contaminant species.

Flowering starts as the days lengthen, quite early in the year – usually mid-May. This is the time to start caging, if necessary. Spun fleece, fine mesh or old closely woven net curtain (draped over the plants with a little support from canes), is placed over the plants of one variety one day, then moved onto the other variety the next. Pollen does not survive long enough to be carried from one day to the next.

Harvesting

Once flowering has finished and the seed pods are developing, cages can be removed and the pods allowed to mature uncovered. The seed stem often grows much further as the pods mature. The pods turn yellow as they begin to ripen and are ripe when they start turning brown and have a tendency to shatter. There is a danger that seed will be lost this way, so keep a constant check on the ripening pods. If you have time, break the seeds out of the pods into a paper sack every few days as they ripen and this will maximise seed production. Otherwise, remove the entire stalk when the majority of the pods have ripened and dried, but not shattered. It is important not to cut the seed stalks too early, while the pods are still green, as the seed will not continue to develop once cut.

Cleaning

Seed should be fully dry for threshing and most of it will shatter from the pods of its own accord. The remainder can be broken out by hand or by beating the pods in a sack and winnowing.

Winnowing is best done outside in a stiff breeze. Pour the seed steadily from one container to another, allowing the wind to blow the chaff away. Do this over a tarpaulin, in case a sudden gust wafts away the seed. Repeat until all the chaff has gone and only seeds remain.

Storage

Stored cool and dry, all brassica seed will last for at least five years, giving full germination.

Returning Seed to HSL

It is vital that seed returned to HSL is not cross-pollinated. So not send seed to us that you suspect might have crossed.

Seed must be completely dry and fully cleaned. Seed that retains moisture can go mouldy in transit and will have to be discarded. It can take a few days for seed to get to us in the post so pack seed in breathable material, e.g. a paper envelope or cotton bag, and place it in a padded envelope or stout box to protect the delicate seed from impact damage.