

Seed Saving Guideline No. 16

Beetroot & Chard

Beetroot - *Beta vulgaris* var. *conditiva*

Chard *Beta vulgaris* var. *vulgaris*

Family: *Chenopodiaceae*

Beetroot and chard are the same species selected for different purposes, either the size of the root or the production of the leaves (often for their startling colour and with a wide midrib). They will cross-pollinate with each other, but not with true spinach which is a different genus. The 'seeds' of beetroot are actually corky fruits or seed clusters, which normally contain between two and four seeds

Growing & Roguing

Beetroot and chard are biennial, grown one year to produce seed the next. The flowers are perfect, but are out-breeding and wind pollinated so cross-pollination occurs freely.

Producing seed from over-wintered roots

- Grow the roots as normal for the first year, sowing in the spring and storing the best roots in the autumn for planting the following year. Lifting and storing them allows you to select those with the shape, colour and size most typical of the variety. Store the roots in damp sand or in black plastic bags with holes cut in them, in a cool, frost-free place. Any roots that are not storing well or are misshapen can be eaten. Do not save seed from plants that flower the first year.
- As beetroot are outbreeders you should select and keep as many as you can in order to preserve the health and genetic diversity of the variety – ideally at least 20.
- Plant out the best roots in spring as soon as danger of severe frost has passed. Plant firmly in blocks or rows at least 30cm apart and with their crown at soil level. Water well to encourage re-rooting. Chard should have similar spacing.

Producing seed from over-wintered plants

- Another method is to over-winter plants rather than mature roots. Sow the seed in August and overwinter them with protection in a glasshouse or polytunnel, under cloches, or in pots (three to a 20cm pot) to be planted out in the spring. Beetroot and chard need cold treatment (vernalisation) to induce flowering.
 - Sown in this way, the plants should flower in June (still requiring isolation), with seed ready to harvest from September. This method does get round the problem of storing roots and occupies the ground for less time. Chard is hardy enough to be left in the ground and the best plants allowed to seed *in-situ* the next spring.
 - The tall twisting flower spikes of beetroot are surprisingly attractive and smell delightfully like honey. The spikes are branched and can grow to 1m or more, needing strong staking.
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Pollination & Isolation

All the beets and chards are wind pollinated and will cross readily with each other. Spinach beet, being a different type of chard, will also cross-pollinate with beetroot and chard, as will sugar beet (watch out for a field of sugar beet nearby where there may be plants in flower).

The pollen can be wind-borne over relatively long distances so isolation is important. Commercial seed growers recommend a minimum isolation distance of 500m for similar varieties (e.g. between two globe-shaped beetroots) and 1-3km for different types of crops (e.g. between beetroot and sugar beet). If you are confident that no other beet, chard or sugar beet is flowering around you and if you save only one variety each year, you may not need to worry about cross-pollination. Crops grown for eating are not a threat, provided any 'bolters' are removed before flowering.

Isolation can also be achieved by 'bagging' or using horticultural fleece. Isolate as soon as the first flowers start to form. Insect-proof mesh is not suitable for beets as the pollen is fine enough to pass through even a very small mesh. Horticultural fleece is a better barrier, but can cause problems with humidity.

'Bagging' beetroot (using potato sacks, which are reasonably weatherproof) is an option, but should not be done on a regular basis due to the threat of inbreeding depression. Only six or seven can be isolated together, not the 20 required for a healthy population. Push a stake into the middle of each circle of plants and gently bend all the flower stalks towards it. Cover the flowers with a large potato sack and tie round the base of the stems. Some sort of cushioning (cotton wool or soft paper towel) will be needed to reduce abrasion round the stems and to prevent stray insects and pollen getting in. On still days shake the bag to keep the pollen moving and ensure seed set.



Harvesting

The seeds are mature when they start to turn brown, which they do successively from the base of the flower spike upwards. They do not fall off readily so can be left on the plant until all are ripe, and then harvest the whole stem. Remove covers when flowering has finished to let in light and air. Inspect regularly to see when the seed clusters start to form.

Cleaning

The mature seed clusters can easily be stripped from the stalks by hand. Pinch off the tips of the stalks where the seed clusters are small and immature, and sieve to remove any debris or dust. There is no need to separate the seed clusters; they are normally supplied this way and separation can injure the seeds.

Storage

Beet seed will store for up to six years. Expect 50% 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.