

Grow your own

resilience, flavour and health, from the seed up

Localise your favourite veg – Tips on Saving Seed Biodynamically

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Thinking ahead is best when preparing for seed saving due to spacing and cross-pollination.

If you are interested, the easiest way to start practicing saving seed is with flowering plants such as: Calendula, Cosmos, Aquilegia, Batchelor Buttons, Forget-Me-Nots, Foxgloves, French Marigolds, Nasturtiums, Poppies, Phacelia, Sunflowers, Zinnias etc. where you simply collect seed as it matures. Getting more enterprising you might want to let mustard, rocket, radish, basil, coriander and other short lived plants go to seed, provided they went through a good manifestation of full leaf/plant development and have given you plenty of time producing a crop for you first.

What do we look for to collect vigorous and viable seed?

The main criterion is to make sure that the vegetative part of the plant is healthy and has a well-developed and balanced growth, full green leaves which are well formed, a sturdy stem, and disease free. In short, just like **natural selection**, choose the strongest, most beautiful plant with best expression of the variety. With experience you can also choose for what you want to select for. E.g., earliness, fast growing, expression of flowers and colours, structure and size of the plant/vegetable, taste, productivity, resilience to frost or drought, and disease resistance, cared for over several generations of the plant this can make a big difference.

The best results are obtained when the seeds can ripen on the plant. This is achieved either by having a dry spell when they dry naturally, or by protecting them. Or we can cut the whole stem of the plant when the seed is mature and hang them upside down in a dry, warm and at least partially light filled place, (greenhouse, polytunnel or



Carrot seeds ripening in their second year

Saving your own seeds is letting evolution do what comes naturally, and we can enhance the quality of plants for embellishing the garden with flowers, in growing food plants or even herbs for wildlife and medicine.

In working with plants and seeds you help them adapt and evolve to local conditions, you help the plant grow resilience, flavour and health, which is then held in the seeds. You start with open-pollinated seed of course; F1 or other hybrids will not breed true so your work will not pay off, but this may not show immediately.

Commercially produced seed, even organic, is not usually adapted to home garden needs or your local area (most are commercial strains which are adapted for commercial one-off harvesting and are produced abroad). It has never been more important to make seed saving part of our regular growing calendar, and for all of us to become **seed guardians**.



Fennel seed is an easy one to collect in the autumn. (Picture credits: Richard Swann)

conservatory are good places) or wrapping a paper bag around them to protect from moisture at night when the temperature drops.

Then simply put the dried seeds into a glass jar or paper envelopes (label: name and year) and store them somewhere dry and dark, ideally with a temperature range between 6-10 degrees centigrade, and where there is very little fluctuation of environmental conditions, away from animals and insects. Most seeds will last many years, if they are kept in a cool and protected environment, with the exception of parsnips.

Principles for growing seeds

To reproduce vegetable food crops, taking them through flowering and seed-setting requires some essential technical knowledge, which can be easily learnt. The following principles will help to set the scene for producing seed from selected crops grown in one's own garden and market or community gardens.

Plant flower biology

Dioecious are entire plants which are either fruit bearing (female) or pollen bearing(male) plants, like the date palm, true spinach, asparagus, hop, mulberry and hemp.

Monoecious plants have separate flowers for producing pollen and others for fruiting development, such as squashes, courgettes, cucumbers, sweet corn and melons.

Hermaphrodites or 'perfect flowers' have combined in each flower, anthers for pollen and stigmas for fruit and seed development. 'Perfect flower' plants comprise root crops, the beet family, the cabbage /brassica family, alliums, celery, celeriac, tomatoes, peppers, beans, peas, lettuce and endive, basil, coriander, parsley, dill, fennel and more.

Pollination and cross-pollination

Most crops are pollinated by insects like honey, wild, and bumble bees, hover flies, blowflies and many others, these are referred to as **insect pollinated crops**. Even self-pollinated crops may need insects, as insects landing on the flowers triggers the pollen release onto the stigma. There are a few crops which are **wind pollinated** like sweet corn / maize, the entire beet family, true spinach and orache.

• **Semi cross-pollinating species** which cross-pollinate to a certain degree are aubergines, peppers, chillies, runner beans and broad beans.

• **Cross-pollinating species**, also sometimes referred to as 'out breeders' or 'cross breeders' need other plants of its own kind to maintain bio or genetic diversity. In this case one plant cannot hold the genetic diversity alone, (i.e., all the characteristic traits associated with a variety) these are only genetically carried collectively so growing a minimum number of plants is essential for seed development. To name a some 'cross-pollinating' crops: carrots, beet family, parsnip, celery, onions, leeks, the brassica family, sweet corn, the squash family, spinach, coriander, basil, parsley and dill.



Hanging Borlotti beans to dry in a garden shed



Onions seed head

Minimum number of plants for successful seed production:

and why it is good to have a seed saving circle. For **cross pollinated** species the minimum number of plants for seed breeding varies according to the species. The general recommendation is to select at least 25 plants, the more the better. This is not a problem in commercial vegetable production where usually hundreds or even thousands of the same plant are cultivated – but it is challenging for the home-gardener.

- **Self-pollinated species** like tomatoes, peas and lettuce are generally self-sufficient and don't require cross pollination with others of its own kind to maintain their genetic diversity, so in theory saving seeds from a couple of plants is enough. However, it is best practice to harvest seed



Seeds from open pollinated seeds can be saved from ripe tomatoes

from **several plants**. So, these are good, easy, choices for seed saving at home.

Isolation distances: This applies most importantly to cross-pollinators, but even some self-pollinators do cross and require isolation distances.

Keeping a variety pure (i.e., true to type) requires sufficient isolation distance from another flowering crop of the same species, which would cross-pollinate if too close, making it 'impure' and no longer true to its nature. For example: a crop of **onions** in flower will cross pollinate with other onions in flower, so a minimum distance is needed to prevent cross pollination and to keep the variety 'pure', (at least 500 meters distance with other flowering crops of the same species is advised). This is a lot for most home-gardeners, another reminder why working with others for seed saving is important.

Self-pollinated crops require shorter distances (from 2 to 20 meters) depending on the species, to keep the variety pure. This is one of the reasons for working with friends and neighbours spreading varieties between you or working with a big community garden or group of allotments.

Processing seed for saving – some details

The Squash or Cucumber Family: Courgette and Marrow, Squash, Pumpkin and Cucumber.

Take the seeds from a fully ripe fruit. Ferment them by soaking the seeds. Place the seeds in a glass jar or bowl and cover with just enough warm water so the seeds float (the good ones will eventually sink to the bottom). Leave the seeds soaking for three to four days. Keep seeds out of sunlight. Then dry them on kitchen towel and store (remember to label). Beware of cross pollination.

Tomatoes: these are grown as usual, the best performing and healthiest plants should be marked/labelled for saving seed. Fruits are allowed to ripen fully on the vines. Harvest the chosen fruit, mush/pulp and mix with water 50/50 and leave to ferment for three days in a warm place, stirring every day. Heavy (good) seeds will fall to the bottom and light seed and pulp should remain on the surface. Water is then added and light seeds and

pulp gently poured off. Keep adding water to separate the good seeds from pulp till all seeds are clean of pulp. Then dry carefully and store the seeds away from the light, in dry conditions. Label and store.

Saving seeds from other annuals such as **legumes like peas and beans**, is simple, just let the pods on the plants ripen fully, to be dry and brown and then take off the pods, store the seed in a paper bag for a couple of weeks to ripen even more in the house. Then shell and store in a cool place, well labelled. Beware cross-pollination though.

Biennial crops for seed:

Let's start with the Carrot family

or Umbelliferae: Select ripe (even from a store or clamp) **carrot, beetroot, chard, celeriac and parsnip**, these plants are replanted where you want them to flower in March/April depending on weather and soil conditions. These can be planted outdoors if the climate allows or in a polytunnel/greenhouse at spacings of 15-30cm in the row x 60-75cm between rows, replanting roots with crown at soil level on flat ground or on ridges. With onions it is similar to root crops, planting 20-30cm in the row x 60-75cm between rows with the crown showing at soil level. Beware cross pollination in onion family and other varieties as above – this can be managed by choosing just one beet vegetable, one variety of carrot, etc.

Brassicac: With winter-hardy crops like **brussels sprouts, purple sprouting broccoli, cauliflower, kales (and winter leeks)**, before signs of bolting /sprouting, the best, true plants can be dug up, keeping soil round them as protection, and transplanted into their final seeding place at 45-60cm in the row x 75-90cm between rows for brassicas, and 30cm x 60-75cm for leeks for flowering and seeding indoors or outdoors, as climate and space allows.

Harvesting biennial seeds:

Seeds do not all mature at the same time, so when harvesting by hand, one often needs to harvest several times over a period of weeks; collect seed after any dew has dried, on a dry day (air or fire days are generally best). Commonly secateurs are used, cutting the stalk 10-40cm below seed heads /seed stems, depending on length of stem below seed, to

allow sap in the stems to further mature the seeds after cutting. This applies to roots, onion, leek, brassica and chard crops alike. Seed heads or stems are laid out on fine meshed drying frames (like a frame for drying woollens) in airy warm spaces to dry further before they are threshed, (this helps free the seed from the remaining dried plant).

CLEANING:

Remember to make sure that the chaff and stems are free of disease and insects, which could affect the seed quality and viability.

Dry and Wet Cleaning: wet is used for seeds which are embedded in moist flesh, such as tomatoes, melons, pumpkins, squash and cucumbers, as above.

Dry processing is used for seeds maturing in a dry receptacle – capsule, pod, husk or case. Let the seeds dry on the bush/stem. In case of rain, protect the mature plants/seeds or harvest whole plants (with mature seeds) before rain and hang upside down in a warm and shady place. When fully dried, gently pull the seeds off by hand or beat the stems on a cloth on the ground to then collect them. If there are residues of seed husk or plant material, winnow the seed by putting into a dustpan and blowing gently over them and collecting the heavier seed closer to you on the cloth below and the lighter debris and plant impurities will be separated by being blown further away. After winnowing if the chaff does not separate fully, you can store them together, as long as all is absolutely dry. Grade out small and light seeds that are not so good or viable.



Calendula seed head

Happy growing and seed sharing – seed growing circles are a great way to save seed and variety diversity in your local area. As you can understand from the above, you need large areas for some types of seed growing, and sizable distances between varieties. So join up with others or just work with one or two types of plants that are your favourites, your best peas or a special sort of tomato and share and swop with others.

Join a local seed saving initiative - Wouldn't it be amazing if we could become independent from the big corporate seed companies working with seed saving exchanges and circles, such as we find with many Transition Towns, climate friendly towns, garden clubs etc, who have made a start to break these cycles of dependence. **Gaia** run courses on seed saving and **hoping a new Seed Company initiative can rise anew from the ashes.**

STOP PRESS!

There is an initiative to try and rescue the seed work in the UK. Apart from financial support they are looking for three people to take on the practical work. For further information please contact Hans Steenbergen whatnextforukseed@gmail.com

Sustainable, open pollinated organic seed suppliers, trainers and more

To complement what you can manage locally, there are companies like Vital Seeds, Tamar Seeds, Heritage Seeds (Library) and the Real Seed Company. All supply good quality open-pollinated organic seed, and with the Seed Cooperative in Administration we do not yet know what will happen and if anything will come of this difficult situation that is such a disappointment and dashing of hopes. However there are other seed businesses that work with similar aims, care of heritage and real garden-suited varieties with diverse genetics which provide us with the nutrients and variety of foods we all need to be healthy. So if and when you are looking for seed for your garden we can recommend our friends at:

- **Vital Seeds:** <https://vitalseeds.co.uk/>
- **Real Seeds:** <https://www.realseeds.co.uk/about.html>
- **Tamar Seeds:** <https://tamarorganics.co.uk/>
- **And the Heritage Seed Library (a membership organisation)** <https://heritageorganicseeds.com/>

For more information on seed and food sovereignty see: **Gaia Foundation** <https://gaiafoundation.org/areas-of-work/food-seed-and-climate-change-resilience/>
For Seed Saving and care training see: <https://www.seedsovereignty.info/>

Some thoughts on why to choose seeds from the companies above as opposed to "organic" sold by the big commercial companies.

1. The seed varieties on offer are open-pollinated and adapted to home garden and family usage
2. Varieties you can keep and use the seed if you grow and harvest it carefully, as the above companies will not sell you F1 hybrids or Genetic Modified or Engineered seed
3. They provide seeds and varieties with genetic diversity with nutritional value, and assures healthy ongoing development of the variety
4. Commercial seed companies supply seed adapted to commercial growing and mechanical processes such as consistency of product, ripeness designed for commercial harvesting – ie all about the same time within a window of about 3 days, rather than spread across several weeks as preferred by home growers, and where look is prioritised over taste in the breeding and 'commercial suitability' over nutrition.