

Start seed saving

Now that we know a little about how the plant produces a seed, we can get started with our own seed-saving.

Seed saving is easy but there are a few things that you have to know before you start. When planning your seed saving you need to consider the following things for each crop:

Timing – when will it flower, how long will it take to set and ripen its seed?
Space – will the plants get much bigger than if you are growing them to eat?
Numbers – how many plants do you need to leave to flower and set seed?
Cross pollination – will your seed plants cross with any other plants that are flowering nearby?

Rogueing – the technical term for getting rid of plants that are not typical of the variety, or which have undesirable characteristics

Maturity – telling when the plant/seed has reached the right stage for harvest

Storage – keeping your seed in the right conditions



Timing

Some vegetables are **ANNUALS**, meaning that they germinate, grow, flower and set seed in a single year.

- For example, lettuces only take a few weeks extra to flower and set their seed although it is best to start your seed lettuces early, so that they are doing this in summer when the weather is drier.
 - Some crops, in places with a short growing season, like Scotland, may need to be started early, in a polytunnel or on a warm windowsill, to make sure that they can grow and set seed within the year.
- For most annual crops, you will probably need to leave the plants to grow on longer than if you were just growing them to eat.



Timing

Some vegetables are **BIENNIAL**, meaning that they grow from seed, flower and set seed over two years

- Root crops, such as carrots and beetroot are biennial, as are brassicas, such as brussel sprouts and kale.
- Bienniels grown for seed, therefore, take up more growing space and time than annuals as they need to be in the ground for two seasons.
- Hardy crops, such as parsnips, can be left in the ground overwinter.
- More tender crops, like beetroot, may need to be lifted and stored for replanting the following spring.



Space

- Many crops are very much bigger when they start to flower so planting for seed saving needs a wider spacing.
- Wider spacing also helps when you come to identify the healthiest ones, and the ones that show the characteristics you are looking for, for seed saving.
- Wider spacing can help air to circulate and prevent mould developing when the plant sets seeds and the seeds ripen.
- Flowering stems are often large and liable to bend or blow over so may need extra support using, for example, canes or frames.



Numbers

- Selecting plants for seed saving is a balance between keeping a good genetic diversity within the crop and eliminating any unwanted characteristics in future crops.
- Genetic diversity is a good thing, as it allows the crop to adapt to local conditions. Too much variation will dilute the characteristics that identify the crop. For example if you want beans with a red flower you don't want a crop with such genetic diversity that a lot have white flowers.
- For some vegetables, just saving seed from a couple of plants is fine.
- In other cases, you need a minimum of 6, 10 or sometimes more plants to get good seed and maintain a variety.
- Details of how many plants to grow in order to have sufficient diversity in the seeds collected will be discussed in more detail for each crop later.





Cross Pollination

- Since we want to be able to collect pure seed of a particular variety, we need to make sure that our vegetables do not cross pollinate with other varieties growing near by.
- Those that don't cross, like tomatoes, are easy just take the seed from your chosen variety.
- Other plants, like peppers, that will cross with other types of peppers, you need to either grow only one variety or isolate one plant from others.
 - Some plants may even cross with plants we think of as weeds. For example, sugar beet will pollinate cultivated beetroot.
- NOTE, cross pollination only occurs between varieties, not between species. For example, a cucumber cannot cross pollinate with a squash. They are not the same species. This would be like a dog and a cat being able to create offspring together. It is simply not possible.
- Cross pollination can happen between a courgettes and pumpkins. This would be like a yorkie and a collie dog producing offspring. Odd, but possible, because they are of the same species.



Plants that HAVE TO CROSS to make good seed ("outbreeders")

- These naturally grow in large populations. The group as a whole represents the variety, not any single plant, so the number you grow is important. If you save seed from too small a group, it will give very poor offspring. (Like inbreeding in animals).
- Beet, Chard, Perpetual Spinach. These are all the same plant and will easily interbreed. Grow >10 plants.
- **Carrots.** Grow minimum 60 plants, save best 40 for seed.. Beware crosses with wild carrot ('Queen Anne's Lace') nearby.
- Parsnips. Grow 60 minimum, save best 40 roots for seed.
- **Cabbages, Kale, Cauliflower** are the same species and will cross with each other. You must grow many plants minimum 12. They make lots of seed & it keeps.
- **Pak Choi, Mizuna, Tatsoi** are the same species and will cross with each other. You must grow many plants minimum 12. They make lots of seed & it keeps.
- Leeks . A small percentage of seeds are from self-pollination but give small weedy plants so always discard the smallest seedlings. Allow absolute min 40 plants to flower, really should be 80 to 100
 Sweetcorn. Beware crossing with corn within 10 miles! Grow 400 plants minimum (honestly) and save seed
 - from the best 200.



Plants that DON'T cross, or don't cross much ("inbreeders")

These are all adapted to self-pollinate and so only a few plants need to be sown to save seed.

Tomatoes. Most types will self-pollinate except beefsteak & currant varieties.

Peas. Almost never cross.

French Beans. Do cross a little but simply discard any off types.

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Lettuce. Do cross a bit but not much. Just make sure you always keep seed from the ones that come true.



Plants that COULD cross, but can self-pollinate

- These are normally cross-pollinated by insects, but don't mind self-pollinating. You can save seed from just one plant, but you have to control the crossing in some way, either by isolation, caging, or hand pollination.
- Peppers isolate
- Aubergines isolate
- Beefsteak tomatoes isolate
- Melons isolate
- Squash pollinate by hand
- Courgettes pollinate by hand
- Runner Beans isolate
- Cucumbers isolate



Avoiding cross-pollination

- The distance that one crop needs to be grown apart from another with which it could pollinate is called the **isolation distance**. How big that distance needs to be depends on the method of pollination.
- Some plants easily self-pollinate and usually do so before "alien" pollen can be brought in by the wind or by insects. These plants can be grown close together without any problems.
- Most crops are insect pollinated. The isolation distance will depend on:
- Whether there are similar crops growing close by
- What physical barriers, e.g. buildings or hedges, separate similar crops, as barriers disrupt insect flight paths
- The number and types of pollinators
- O What other plants might divert the attention of insects away from your crop
- How many plants you are growing
- Some plants are wind pollinated and, since pollen can travel long distances on the wind, have to be further from other similar plants or isolated.





Avoiding cross-pollination

- If you are sure that there are no similar crops growing close by, then plants do not need to be isolated. Remember, if the crop is wind pollinated pollen can come from plants far away.
- If you are growing in an urban landscape the other buildings, walls and hedges may be enough to ensure that insects are not bringing in pollen to contaminate your plants.
- Growing a large number of plants in a block rather than a row may be sufficient to ensure that the plants at the centre have not been pollinated with pollen from plants other than those in the block. You can eat the crop from the outer plants and save the seed from those to the inside.
- Biennial plants are usually eaten in the first year so, unless neighbours are growing for seed too, you can probably safely grow your crop without risk of contamination
- Some bees may prefer to travel between different types of plant, meaning that they are unlikely to bring in alien pollen from plants similar to yours. But some bees get a taste for a particular flower, increasing the likelihood of cross contamination.



Building an isolation cage

To make a simple isolation cage ideal for peppers or aubergines, you need some cheap nylon flyscreen - five times as long as it is wide, four canes or thin stakes, some string and garden wire.

Alternatively, you can use old net curtains, or other netting small enough to exclude insects. A piece of screen 1m by 5m will give a cage large enough to cover three or four plants.

- Cut a square piece of screen 1m x 1m to make the top of the cage, and then fold the remaining strip of flyscreen round and sew its ends together. The resulting band will be the sides of the cage.
- Sew the top to the sides, making a cube of flyscreen with the bottom missing.
- To put up the cage over your plants, hammer the four canes into the ground in a square a little smaller than the cage top, so that they stick up a little less than the height of the cage.
- Twist a short piece of wire tightly round the top of each cane, and then run string in a square around the tops of the canes, supported by the wires to stop it slipping.
- Run a second piece of string around the stakes lower down to stop the sides of the cage blowing in against the plants.
- Then slip the cage over your plants, and weigh it down with earth or rocks.





Giving pollination a helping hand

- If plants will self-pollinate then keeping the crop isolated is perfectly fine.
- If plants need insects to pollinate them then you need to replicate the work of the insect by pollinating crops by hand.
- Isolated onion and carrot heads can be pollinated by brushing with a fine paintbrush.

Cucumbers, marrows and squashes have separate male and female flowers:

- To pollinate isolate male and female flowers before they open
- Allow the flowers to open in the bag
- Remove a male flower and brush over the stigma of the female flower
- Reseal the bag over the female flower to stop insects getting in and adding unwanted extra pollen
- Detailed isolation and pollination guides are provided for each crop later.





Roguing

It is important to get rid of any plants that are not top quality. For example, lettuces that bolt early or beetroot with poorly shaped roots will pass these characteristics on if you save their seed.

Remember:

- The crop as a whole must be growing well, or poorer plants are more difficult to spot
- Save seeds from as many good plants as possible. This helps keep maximum diversity in the next crop
 - Never save seed from diseased plants as some diseases will transfer with the seed
- Don't save seed from plants with undesirable traits, like lettuces that bolt early
- Don't save seed from plants that have unusual traits; beans with white flowers if you want red flowered beans in the next generation
- Look at all aspects of the plant. Don't choose extra large fruit if it comes with poor leaf growth as both characteristics will be passed to the next generation
- Mark the plants being saved for seed to prevent these plants being taken as a food crop before the plant sets proper seed



Maturity

- > You need to let the seed mature fully before harvesting it.
- Sometimes this is well past the eating stage. Courgettes, for example, need to grow into full sized marrows and then ideally ripen further off the plant for a couple of weeks.
- In other cases, seed may be ready when the crop is ready to eat. Tomato and melon seed for example is ready as soon as the fruits are ripe.
- Maturity of the seed is often accompanied by a change of colour. For example, peas and bean pods go from green to brown. Leave pods on the plant to ripen fully.
- Some plants shed their seeds when fully ripe so should be collected before they are lost on the ground.
- If the air is wet at the time of harvest then seeds should be harvested early and allowed to dry in a warm, well-ventilated place.





Storage

- Seeds should be separated from bits of leaf and other plant debris before storing.
- Keep seed *cool* and *dry* the opposite of the conditions needed for germination.
- You really must dry it well before putting it away, this can be easily done with oven-dried rice in a tub as a home-made desiccator.
- Make sure you label seeds with variety and the year that they were collected.
- A spare bedroom is ideal for storage sheds are bad, as they tend to swing between hot and cold with changes in the weather.

Detailed information on cleaning and storing are on a separate information sheet.





REMEMBER

You can only save seed from NON-HYBRID varieties.

ONLY save seed from healthy plants that are true to type.

Pull up and eat or discard less good plants before they flower.





Happy Seed Saving!

If you have enjoyed reading about pollination, why not join a SEED-CIRCLE and share your interest, enthusiasm, and of course your seeds, with others in your area.

Contact robin@abundantborders.org.uk



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BIBLIOGRAPHY

Realseeds.co.uk

The website has lots of great information on how to grow, save and store seeds. They also sell seed to get started! We owe them special thanks for allowing us to use a lot of their information in these pages.

Back Garden Seed Saving – Sue Stickland

A fascinating book with lots of detail about saving seeds and it has easy to follow crop-by-crop guidelines.

Abundant Borders

There is lots of great information on our website at abundantborders.org.uk We are happy to answer your questions through our Facebook Group (https://www.facebook.com/groups/virtualcommunitygarden/)

Videos

A great selection of videos from DIY seeds (https://www.diyseeds.org/en/films/)