

## Notes on Seed Saving 2019

Vegetable	Pollination/Will they cross-pollinate?	Minimum number of plants to save seed from	Isolation? Minimum distance?	Notes
Tomato (except potato leaved, some beefstake, currant)	Self-pollination	2-3 good plants (from 6 if possible)	Yes, 3m	Most tomatoes have flower structure meaning they are self-pollinated (stigma located deep inside fused cone of anthers that insects can't enter), so different varieties will be unlikely to cross. Allow toms to ripen fully. Seeds surrounded by gelatinous sac which needs to be removed by fermentation. If many different types of tomatoes present increase distance.
Tomato – potato leaved, beefstake or currant	Normally cross-pollinated by insects but can self-pollinate without harm	2-3 good plants (from 6 if possible)	Yes, 10- 50m (depending on type)	These varieties can cross because the stigma sticks out beyond the fused cone of anthers, so insects can get to it; so best to only grow one of these types of tomato each year or isolate. Early double flowers of some beefstake tomatoes also may have exposed stigmas.
French Bean	Self-pollination but they can be visited by insects, so can cross a bit	Strong inbreeders so can save seed from few good plants (from 10- 20 if possible)	Yes, 3m should be ok	Grow plants specifically to save seed to allow pods to mature and dry on vine. Almost entirely self-pollinated before flowers open, so risk of crossing is low even if grown side by side; if possible isolate by minimum distance or only grow one variety. Some plants produce noticeably different leaves or pods from majority – remove these (rogueing). When processing seed, remove any with unusual shape, size, markings, colour and blemishes etc.
Runner bean	Cross-pollination. Flowers need to be “tripped” by insects.	Outbreeders, so important to save seed from as many plants as possible (minimum of 20-30) to maintain health and diversity of variety	Yes, 250m	Sow as early as you can to allow seed to mature. Will readily cross with other varieties and can be difficult to maintain variety, needs constant selection to keep true to type over time. Before they flower remove any which are unhealthy or atypical eg. leaves look different. Once they flower remove those with flower colour not true to type. If isolating with a cage or if you have bagged individual trusses, will need to hand pollinate. Leave to mature and dry on vine until dry and crisp. When processing seed, remove any which are shrivelled, blemished or have unusual shape, size, markings, colour etc.
Broad bean	Cross-pollination by insects (but some will self-pollinate)	Outbreeders, so important to save seed from as many plants as possible (24) to maintain health and diversity of variety	Yes, 250m	Grow enough to allow rogueing. Varieties will readily cross so best to grow just one variety. By collecting seed from plants in centre of a block the chance of crossing will be reduced (but need lots of space to do this). Before they flower remove any which are unhealthy or atypical eg. leaves or pods look different. Once they flower remove those with flower colour not true to type. Leave to mature and dry on vine until dry, black and crisp.
Pea	Almost entirely self-pollinating but can be crossed by visiting	Few good plants (10 or more if possible)	Yes , 3m	Risk of cross-pollination is low but to reduce risk separate by 3m. For own use, leave as much distance as you can or separate varieties by other crop to avoid them physically mixing. Rogue out weak plants or those not true to type.

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	insects.			Leave to mature and dry on vine until dry and crisp. Remove any that are damaged or discoloured, or with holes (pea moth larvae - moths active in June and July).
Lettuce	Self-pollination but insects can cause some crossing.	1-2 plants	Yes, 2-3m	Do not save seed from plants that bolt early, start with 10 plants if possible, rogue out those that are unhealthy or atypical. Flower stalks upto 1.5m tall, so might need staking. If growing 2 varieties close together, use isolation cage. Main problem is time, in poor weather seeds may not ripen.
Aubergines	Mainly self-pollinated but can be crossed by insects.	6-8 plants	Yes, 15m	Easiest method to avoid crossing is to grow only one variety or if growing in a tunnel/greenhouse, a shorter isolation distance should suffice. Let 1-2 good fruits mature fully on each plant and eat the rest. Remove the core, put into bowl of water, rub hard brown seeds to remove from pulp and good seed will drop to bottom.
Peppers – sweet and chilli	Mainly self-pollinated but can be crossed by insects.	2-3 plants (more if possible)	Yes, 50m	Sweet peppers and most chillies are same species so will easily cross. Easiest method is to only grow one variety or put a few plants in an isolation cage. If very still, gently shake plant to improve pollination. Remove seed from fruit that looks characteristic of variety when ripe (has matured to final colour).
Leek	Cross-pollination by insects.	Outbreeders, so important to save seed from as many plants as possible (at least 16 but up to 40 if possible) to maintain health and diversity of variety	Yes, 500m	Biennial so leave leeks in-situ over winter and let them flower. Remove weak or atypical plants and those with poor foliage. Do not save seed from leeks that bolt in first year. Best to just grow one variety each year. If grow more than one you will need to use a caging technique and introduce pollinators. Seeds take a long time to ripen.
Carrot	Cross-pollination by insect	Outbreeders so use at least 16 and if possible 40 to maintain health and diversity of variety	Yes, 500m	Biennial, so lift roots and select best eg. those that are characteristic of the variety. Store and replant early next season (45cm apart). Stems will grow to 1.5m and seed from primary umbel is best. Best to only save seed from one variety each year or will need to use isolation cages. Beware cross-pollination with wild carrot (Queen Anne's Lace).
Squash, pumpkin and courgette (many different species and may be difficult to find out which)	Cross-pollination by insect	2-3 plants (up to 6 if possible)	Yes, 500m	Squash, pumpkin and courgette may all readily cross with each other, so the best way to save pure seed is to hand pollinate or to only grow one variety. Rogue out plants that have atypical foliage or are unhealthy. Female flowers can be identified by small swelling at base and should be pollinated with male flower from a different plant. Mark hand pollinated fruit with coloured ribbon and once harvested leave fruit for at least 3 weeks for seeds to mature.

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Cucumber	Cross-pollination by insects	2-3 plants (up to 6 if possible)	Yes, 500m	Different varieties of cucumber will readily cross with each other, so the best way to save pure seed is to hand pollinate (bit more tricky than for squashes etc, as the flowers are much smaller) or only grow one variety. Rogue out plants that have atypical foliage or are unhealthy. Female flowers can be identified by small swelling at base and should be pollinated with male flower from a different plant. Mark hand pollinated fruit with coloured ribbon and leave fruit on the vine until swollen and yellowish/orange. Once harvested leave for 3 weeks after cutting to allow seeds to mature. Seeds surrounded by gelatinous sac which needs to be removed by fermentation.
Perpetual spinach, chard, leaf beet, beetroot – all are same species	Cross-pollination by wind	Outbreeders, so important to save seed from as many plants as possible. 6-8 plants for perpetual spinach, chard, leaf beet and 16 for beetroot	Yes, can vary but up to 2km	These are all same species and will readily interbreed/cross, so need to physically isolate specific varieties (once they start flowering) or just let one variety flower. They are biennial, so allow them to overwinter and then flower/set seed. Grow plants together around a stake, cover with mesh or fleece, shake regularly to ensure effective pollination. NB. They will also cross with sugar beet, so make sure none of this is flowering nearby unless you are isolating them.
<b><i>Brassica oleracea:</i></b> broccoli, brussel sprout, cabbage, cauliflower, kale, calabrese, kohl rabi  <b><i>Brassica napus:</i></b> swede, Siberian kale, rape  <b><i>Brassica rapa:</i></b> turnip, Chinese cabbage and Chinese mustards eg.	Cross-pollination by insects	Outbreeders, so important to save seed from as many plants as possible, at least 6 but more if possible (20-30)	Yes, 1.5km	All members within each species ( <i>B. oleracea</i> , <i>B. napus</i> and <i>B. rapa</i> ) will readily cross with each other but not with those from other spp. eg. broccoli will cross with cauliflower but not with swede. NB. Oil seed rape will cross with others from <i>Brassica napus</i> and may be sown in nearby fields.  To ensure seed purity, isolate by 1.5km or use isolation cage and add blowflies. Very important to rogue out atypical plants and not let them set seed. Grow in a block to aid pollination. Produce tall flower stalks, which should be cut when slender pods have dried, they shatter easily and shed seeds.

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mizuna, mibuna, pak choi, tatsoi.				

**Notes:**

**Isolation distances** – in built up area or where there are hedges, trees etc, insects will be less likely to travel long distances so recommended isolation distances may be reduced. NB. Isolation distances quoted are for **non-commercial** seed production eg. home use or seed swaps (distances for commercial production will usually be far greater).

**Check plants** that you are saving seed from regularly and remove any that are weak, diseased or not true to type.

**Sources:** NB. Confusingly, the experts do not always seem to agree. The information above is mainly taken from the following sources.

*Back Garden Seedsaving* by Sue Stickland

[https://seedalliance.org/wpcontent/uploads/2010/04/seed\\_saving\\_guide.pdf](https://seedalliance.org/wpcontent/uploads/2010/04/seed_saving_guide.pdf)

Real Seeds have great tips and advice on practical seed saving: <http://www.realseeds.co.uk/seedsavinginfo.html>

Garden Organic has a great booklet that it's probably worth downloading: <https://www.gardenorganic.org.uk/seed-saving-guidelines>

