Saving Your Own Seed

www.underthechokotree.com
Sustainable Living in the Suburbs

By Nev Sweeney

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1.0 Introduction

In my opinion, learning to save seed from your own home-grown crops is one of the most crucial skills to become competent in! Don't just take my word for it, here are some of the ways that saving your own seed can benefit you.

Saving seeds from your veggies is an investment in the future

Economy – You will save money because you don't have to buy new seed each year, you will have a guaranteed seed source from your own produce.

Start out with open pollinated corn and you can grow from your own seed

Genetic Improvement: adapting them to your environment – By saving seeds from the most prolific, most flavourful, earliest producing or whatever you value, over time you can develop varieties adapted to your specific growing conditions.

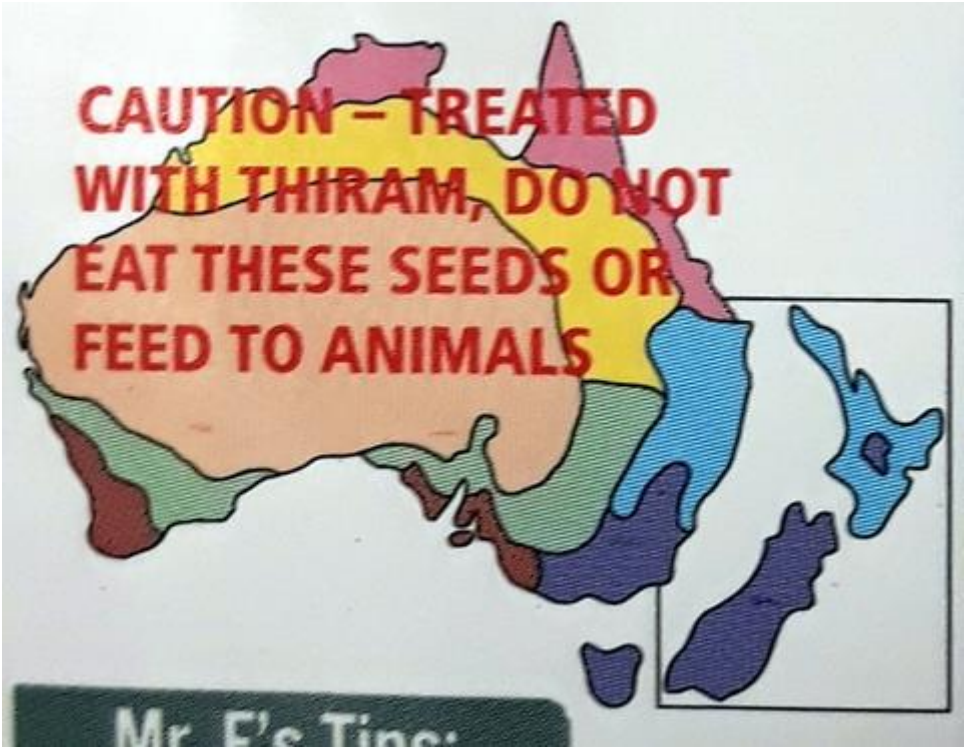
Improving Seed diversity and security – by growing heirloom varieties and specialist vegetables not favoured by mainstream horticulture you will be helping to preserve the genetic diversity of our vegetable heritage.

Beans are an easy crop to save seeds from and a great way to start a seed saving journey

Resilience - You will improve your own food security and guarantee your capacity to produce your own food. Remember during the Covid out break and resulting shutdown, there was an upsurge in people wanting to grow their own food and vegetable seeds became scarce.

Reduce reliance on commercial seed suppliers – there are a limited number of commercial seed companies in Australia. For example, the most common commercial seed companies around here include: Country Value; D.T Brown, Mr Fothergills, Johnsons Seeds and Garden Starters. All of these seed companies are based out of

South Windsor (NSW) and are owned directly or through Mr Fothergills seeds by Harwood Capital Management Ltd which is based in London, UK. Oh, and Yates (another Australian seed company) are owned by a Japanese paint company.



If you do buy commercial seed, check the packet first

Chemical Free seed – some seeds such as radishes, some cucumbers and sweet corn are treated with fungicides such as thiram prior to being packaged by commercial seed companies.

Increase Biodiversity – allowing vegetables to flower provides food for and encourages pollinators to hang around at your place.

Brassica flowers attract the bees

Improved germination – seeds cannot get any fresher than when home produced, and fresh seeds have better germination rates.

It is really worthwhile to learn how to save, clean and store the seeds from your own home grown crops for all of the above reasons, but also because it is fun, and very satisfying to be able to feed your family and friends from seed which you have saved from your own produce!

2.0 General Notes on Seed Saving

Planning

If you plan to save you own seeds, the plants that produce those seeds will take up time and space in your veggie production process so this will need to be allowed for in your sowing plan. This is particularly so for biennial plants such as carrots, onions etc that can take up space for months while you wait for them to flower and set seed. To get a good sample it would be best to harvest the seed from several different plants, so factor the size of the flowering plant into your beds and how long they will have to be there for you to get viable seed.

Starting Stock

You will only be able to propagate from your own seed if they are open pollinated, that is to say they are non-hybrid seeds. Vegetables grown from hybrid seed can be larger, resistant to pests and/or diseases as well as display a phenomenon known as “hybrid vigour” where the hybrid is superior to its parent vegetables in terms of yield or other properties. The down side is that seed saved from a hybrid vegetable will either be sterile or not breed true, so you could wind up with any combination of the parents characteristics.

Open pollinated or non-hybrid varieties have been grown for hundreds or thousands of years by saving seed from this crop to grow the next, so it is vital that you start with open pollinated seed. The seed packet you by from your local hardware or garden centre may be labelled “F1” if it is hybrid, or it may not. Open pollinated sweet corn seed for example is impossible to get from the usual commercial suppliers (you know – Yates, DT Brown, Mr Fothergill’s etc) . The only way to be absolutely sure is to by your seed from a reputable open pollinated seed supplier such as Eden Seeds (See the links area of this site).

Picking your mark

As mentioned above, one of the reasons for saving your own seed is to develop your own mini varieties, specifically adapted to your own microclimate but this will only happen if you save seed from your absolute best vegetable specimens. I know, I know it’s difficult, but your biggest, juiciest, tastiest, earliest (or latest, depending on what you are trying to achieve) vegetables need to be left to mature and set seed rather than consumed. By making sure you only save seed from your absolute bestest crops, over time you will select for those characteristics that make them best adapted to your particular soil, climate and aspect, so it will be well worth it in the long run.

Storage

Home saved seed, or any seed for that matter, should be stored in a cool dry area in a container that is proof against rodents, who love seeds. If you store them in paper envelopes (as I do) or the sealable plastic bags you will need to store these in a stronger outer container such as a tin biscuit box or glass jar. You could recycle small glass jars and store one variety of seed in each. It is also important to mark each batch of seed with the vegetable, variety and harvest date, particularly if you memory is as bad as mine. The harvest date will allow you to work out how long you will be able to keep planting that particular batch of seed.

Freezing your dry seed for a couple of days before putting them into storage will deal with any weevil eggs so that you don't find a container full of dust and very fat weevils when you were expecting to find seeds. The seeds must be fully dried though or water freezing in them may cause damage, if in doubt, dry a little longer.

3.0 Conducting a Seed Germination test

OK, so you have your seed, how embarrassed would you be if you were counting on it for your next year's produce and for some reason it wasn't fertile? To prevent such embarrassment you may wish to test the viability of your seed with a seed germination test.

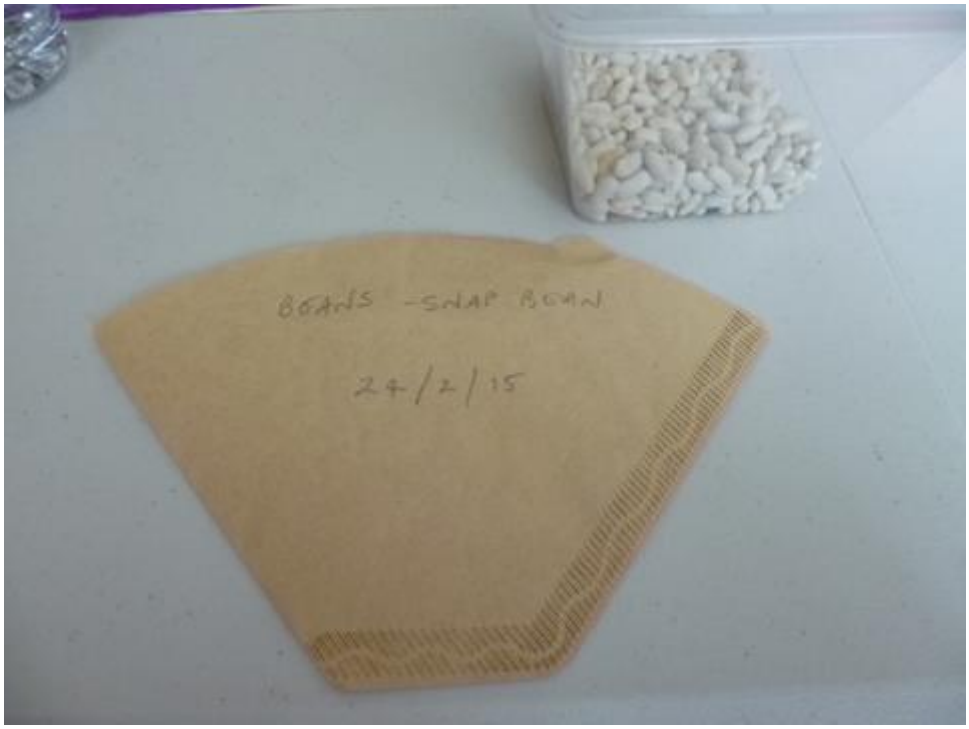
The idea is to take a known number of seeds, keep them warm and moist for the required time, then take note of how many actually germinate. Expressing the number of seeds which germinated as a percentage of the total number of seed tested will give you the germination rate for that batch of seed.

I used to use paper towel to place the seeds on and keep them wet, but recently I have found that coffee filter papers keep their shape better and are tougher when wet and

so are all ‘round easier to work with. I use size 4, designed for 10-12 cups of coffee, you can pick up a box of 40 filters for around $2.00 and they will last you quite a while.

Carrying out the Test

1. Give the seed a good mix and select a representative sample.
2. Write the name and variety of the seed, date and number of seed on your coffee filter (or paper towel or whatever) in pencil before you dampen it.
3. Dampen the filter and place the measured number of seed into the filter in a single layer, with some separation between the seeds where possible.
4. Fold the filter up and place it in a screw topped jar and place the lid on, to keep the moisture in. If the weather is cold place the jar in a warm place in the house, preferably around 25°C.
5. If you have a number of different types or batches of seed to test, you can repeat this procedure and place them all in the same jar if there is room.
6. Leave them in the warm place and check them every few days. Some seeds like peas and beans will germinate quickly but others like celery may take two weeks or more to germinate.
7. Once some seeds have germinated, make a note of how many and remove the germinated seeds from the paper and replace it in the jar.
8. Check again every day or two until no more seeds germinate.
9. To calculate divide the number of seeds which germinated by the total number of seeds originally placed in the jar and multiply the result by 100. This will give you the germination rate for your seeds, expressed as a percentage.


BEANS - SNAP BEAN
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The germination rate, apart from alerting you to an infertile batch of seed will also enable you to work out exactly how much seed of a particular variety you need to plant to get the harvest you are looking for. So in general terms –

- If the germination rate is less than 10% – chuck them out
- If the germination rate is around 50 % then plant them thickly.
- If the germination rate is over 75% plant them normally.

4.0 Setting up a Seed inventory

If you want to grow the majority of your food yourself, fresh seed is important to ensure good germination. Unless you are going to live on zucchini for the rest of your life you are going to need to manage a variety of seed to ensure you always have enough fresh seed on hand to keep your garden producing. One tool you can use to help you do that is the seed inventory.

If you are like me, you have a collection of various seeds, bought in form various suppliers as well as home grown, of various ages and in various stages of use. It is a great exercise to get them all into some semblance of order and have a record, so you know exactly what you have, and know when you need to save or order more. When I set up my seed inventory, I took the opportunity to get rid of my surprising large collection of out-of-date seeds so I will no longer have that wonderful feeling of going to sow a particular vegetable seed and find they are either all gone or all out of date. To set up your inventory, you can use the blank Excel spreadsheet which I used, it has available as appendix 1. The spreadsheet is set up with 6 columns –

1. Vegetable – Fairly straightforward this one! Just type in the name of the vegetable the seed is from.

2. Variety – Some vegetables have hundreds of varieties available, and you may be growing more than one to extend the harvest, provide variety in your diet or just because you like them. Keeping track of the different varieties of each vegetable is important to make sure they are available when you need them. It can also be handy to keep a record of which variety you are growing, even if you are only growing one so you know which one to re-order when the time comes. Some vegetables do not have a varietal name attached, so I just leave the space blank.

3. Amount – It is handy to also to know how much of a seed variety you have in stock so you know when supplies are getting low and you need to get some more. Some seed packets will tell you how many seeds are in the pack, the

larger seeds can be either counted and entered as the number of seeds or weighed if you have a lot. For a lot of the smaller seeds like brassicas or umbellifers you can get a whole stack of plants out of less than a grams worth of seed, and my scales don't go down below a gram so in this column I enter "<1 gram" and it works for me!

4. Source – Here you can enter the seed company you bought it from or the friend who provided it of if you saved it yourself (in which case I just put "home grown"). You may as I sometimes do, have the same seed from different sources so it is good to know where your freshest seed came from.

5. Harvest date – is simply the date you harvested your home grown seeds. That way you have some indication of how old they are when you come to use them and whether they are fresh enough. For commercially bought seeds you won't have this date, what you will have is –

6. "Sow by" date – This can be read from the packet of any commercially bought in seeds. You can work out this date for your homegrown seed by consulting one of the seed viability lists on the net.

There is also a section at the top where you can put in the date the inventory was originated and the date of the last update, where applicable. I used Excel to design the form so that you can go through your seeds and enter them in any order, then sort them for how you want them, I sort alphabetically by vegetable.

There is one more job and that is to review your list the seeds you have with a couple of seed catalogues and determine if there are any vegetables and/or specific varieties which are currently not in your inventory but which you wish to grow. Enter the names and varieties into your inventory but leave the rest of the fields empty, the information can be entered once the seed has been obtained.

It is a worthwhile effort to set up a seed inventory, then you can use it to plan out the seeds which you need to have to grow the food you want to eat. This will ensure that you will always have fresh seed of the right type on hand whenever you need to plant.

5.0 Individual Seed Saving Techniques

5.1 Carrots

Carrot is not the easiest seed to start your journey into the joys saving your own seed so you might want to start with something easy like peas or beans if you haven't tried seed saving before. It is, however, very rewarding particularly when eating your own home grown, second generation carrots.

Carrots (*Daucus Carota var Sativa*) are umbellifers, (a group of plants that include fennel and parsley among others) that is to say they bear the flowers and seed on umbels, a series of small stalks clustered on the end of a longer stalk, with a series of the longer stalks making up the umbel (note: this is a lot easier to see than it is to describe!). Carrots are also biennials, they store up nutrients in their swollen root the first year and then put up a series of seed heads the following year. If you plant your carrots before the winter solstice some carrots may run up to seed in their first growing year once the days start to lengthen and in tropical areas the carrots may flower at the end of their first growing season.

Carrot flowers are insect pollinated and crossing between varieties can occur although in practice it is unlikely that you will have different carrot varieties flowering at the same time. The weed called wild carrot (*Daucus Carota*), also referred to as Queen Ann's Lace, will cause genetic contamination of the seed and result in reduced yields when your saved seed is sown if they grow nearby and flower at the same time as your target carrot. As with any seed saving enterprise, only save the seed from your best carrots and not from any that flowered early.

To harvest the seed allow the carrots to flower and the seed to form, but then keep a close eye on your carrot seeds as they can dry out quickly and start to fall off before you can harvest them. You may wish to harvest the umbels before all the seed has gone brown by cutting the main stalk and storing them in a cool but dry well protected area. So when the seed has turned fully brown rub the umbels between your fingers and the seeds will fall off. There will also be bits of umbel, stalk and other trash in with the seed so if you want to clean your seed pour it from one container to another while gently blowing through the seed to dislodge the trash.

Carrot seed stored in a cool dry area will remain viable up to three years.

5.2 Brassicas

The brassica family (previously called the crucifers because of their cross shaped flower) is quite large, containing many of the edibles we enjoy today including: broccoli, Brussel Sprouts, cabbage, cauliflower, choy sum, kale, mustard, pak choi, radish and turnip. While mostly being annuals, some like kale and cabbage are biennials (ie the will only flower and set seed after passing through winter). They are all insect pollinated.

The brassica family can be somewhat (how can I put this…..) promiscuous! Some members of the family will cross pollinate quite readily so that any seeds you save may be hybridised, resulting in a plant which may look nothing like either of the original parents! The important thing to remember is, if the genus and species name (first and second parts of the Latin name respectively) are the same, they can cross pollinate. If this is the case, to obtain seed the plants will need to be kept a kilometre apart (which in the home garden is difficult to say the least). The other option is to only let one type set seed, removing the others before they flower.

Also, many brassicas are self-infertile so if only one plant is allowed to flower the likelihood of getting viable seed is low, so let a number of plants flower to improve pollination chances. This will also contribute to genetic diversity in the resulting seed. A side benefit of this is that beneficial insects are attracted to brassica flowers and may find your garden to their liking and hang around providing pollination and pest control services for free.

Following is a list of the common brassicas and the genus and species to which they belong –

Brassica oleraceae: Broccoli, Brussel Sprouts, Cauliflower, Cabbage, collard greens, Kale, kohl rabi, kai lan

***Brassica rapa*:** bok choi, Choi sum, turnips, field mustard, tatsoi, wong bok

Brassica juncea: canola, Giant red mustard, green wave mustard, mizuna

Raphanus Sativa: Radish

Eruca Sativa: rocket

Saving Seed

The seed pods of brassicas are elongated tubes with a pointy end and look somewhat similar regardless of the type or variety of brassica. To save the seeds allow the desired type to flower and set seed. Do not harvest the seed until the pods (more correctly called siliques) are fully dry and brown and the seeds rattle around inside. This can be a bit tricky because if they remain in this state for too long the pod can break open and scatter the seed so keep an eye on them. Harvest the whole plant and allow it to complete drying under cover for two weeks.

Once the siliques are nice and dry you need to get the seeds out, they are small and round, with colouration from red to reddish brown to blackish brown. The way I do this is to remove the siliques from the branches with a pair of scissors (tedious but cuts down on the trash needing to be removed later) and put them into a large plastic bag (which can be re-used). Once I have put all the siliques I want into the bag, I seal the top and crush all of the brittle siliques with my hands.

The seeds can all be concentrated into the bottom corner of the bag, allowing then to be drained off into a container by cutting off a small amount of the corner. (when re-using the bag just tape the cut corner up again). Any small bits of the remaining trash can be removed by sieving or if no sieve the right size is available pour the seeds into a bowl and roll them around and concentrate the seeds in the bottom of the bowl. Turn the bowl up on an angle and gently blow across the top of the seeds and trash, the lighter trash will be blown out leaving the heavier seeds behind.

Package the seeds and label with the type and variety of brassica and the date of harvest.

5.3 Lettuce

Growing lettuce is not a bad way to start out growing your own food. The more popular supermarket iceberg lettuce can be a bit of a pain as it tends to bolt up to seed if you get a change in weather conditions just as it is getting to the point of harvest. And an early bolting lettuce is NOT one you want to save seed from (ironically enough)! But the iceberg lettuce is only one variety of one type of lettuce available.

Iceberg lettuce is part of the crisphead group, but there are also butterhead, cos and looseleaf lettuces. Looseleaf lettuces are good because they can be grown as a cut-and-come-again vegetable, which means you go back for a series of small harvests from a growing plant rather than harvesting the whole plant and then having to preserve it. We grow one butterhead (green mignonette) and one looseleaf (usually royal oak or lollo rosso), sowing one or two of each every two weeks.

If you leave a lettuce to its own devices, it will eventually send up a seed head, although crisphead types may need assistance by cutting the head open to allow the flower stalk to emerge. We find with our butterhead and looseleaf varieties, we harvest them for a

while then allow them to send up a flower stalk. From the eating stage to seed harvest stage can take two months.

Lettuces are an easy crop to save seed from and are largely self-pollinating although there may be a small amount of cross pollination if varieties are grown side by side or if there are prickly lettuce (a wild lettuce ancestor) growing nearby. If you are only growing one lettuce variety at a time, stagger your plantings so that lettuce varieties set seed at different times, or keep a distance of 2 – 3 metres between varieties this problem will be considerably reduced.

We harvest the seed when two thirds of the flowers are showing the fluffy white calyx tissue on top of the seeds. You do have to keep an eye out as it is easy to go to your favoured seed plant(s) and find the seeds have matured and moved on while you were doing other things! In inclement weather, I have harvested the whole plant once most of the seeds are ripe and left it to hang upside down in the garage, from the rafters to dry out.

To harvest the seeds from the seed head, I rub the seed heads between my hands into a shallow bowl, which breaks the seed away from the calyx and seed heads. I then hold the bowl up to one side and blow along it, removing the light trash but leaving the heavier seeds behind. Once harvested I leave the seeds in the bowl or put them into a paper envelope for a few days to ensure that they are fullt dry, then pack them off (correctly labelled of course) into glass jars or small resealable plastic bags.

There is a world of lettuce varieties so give them a go and step outside the supermarket-iceberg-lettuce mould and try growing new types of lettuces and then save their seeds to ensure your supply of lettuce into the future!

5.4 The Onion Tribe

The “Onion tribe” (also referred to as the Alliacaeae family) includes onions, spring onions, leeks, shallots and garlic. The family are biennial, putting their growth into the

bulbs in the first year, then sending up flower stalks in the second year. Varieties which are being grown for seed should be no closer than 400m from each other. Garlic, of course is propagated vegetatively by planting cloves from the previous years crop rather than by seed.

The onion tribe are insect pollinated and, as usual, only the best specimens should be used to save seeds from, thereby ensuring you are continuing to improve the strain you are growing, so make sure they are firm, not squishy (technical term).

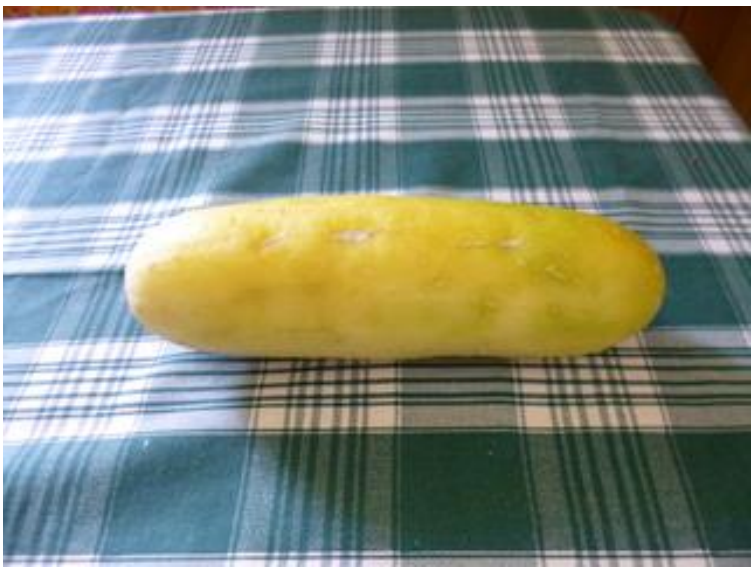
To save your onion tribe seed, allow your plants to flower (the more you can let do this, the better will be the genetic diversity), the flowers develop at the end of their tubular green leaves. The leaves may require staking to keep them upright. The seeds will be ripe enough to harvest when the leaf becomes brownish, and the seeds are black. Not all the flowers will have ripened seeds at the one time so you will need to keep an eye on them. Once the flowers are ripe cut them from the plant and place them in a paper bag to dry fully, and place the bag in a cool, dry space.

To remove the seeds from the seed heads, rub them between your hands over a bowl or sheet of paper. This will result in a mix of seed, seeds capsules and stems being removed from the seed head. To separate the seed use a sieve the right size to allow the seeds through while retaining the trash, or place in a bowl and gently blow the trash away, leaving the seed behind.

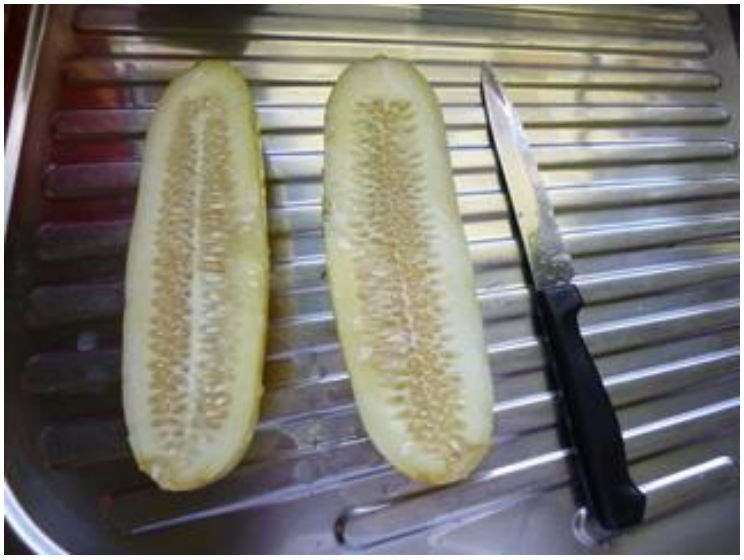
Onion tribe seeds will remain fertile from two to three years. Onion seed is also used as an ingredient in Indian cooking under the name of kalongi or kalonji

5.5 Tomatoes and Cucumbers

These vegetables are from totally different families but share a characteristic that means they are treated in a similar fashion when we want to save their seeds – their seeds are surrounded by a sticky gel which needs to gotten rid of before they can be dried for saving. This process of removing the gel involves fermentation, which as a side benefit can destroy seed borne disease organisms such as bacterial spot in tomatoes.



Tomatoes are pretty much self pollinated but with the cucumbers, you need to have ½ a kilometre between varieties, although other cucurbits are not a problem. Leave both fruits to ripen on the vine or plant, the cucumber may grow quite large and will turn yellow to golden or brown. Tomatoes, of course, are tomatoes and should be just past "eating" ripe.



For both types of fruits, slice them open and scrape out the mass of jelly and seeds into a bowl or jar and leave them to ferment for a few days, the tomatoes tend to get frothy, the cucumbers less so. Once they have fermented pour the contents through a sieve and wash in plenty of clean water to remove the remains of any adhering jelly. I then place them onto some mesh or even paper towel and allow them to dry for a week or so before storing them. They will stick to the paper towel but are easily removed.

Store the seeds in an envelope labelled with the name and variety of the vegetable as well as the date the seeds were harvested. Both seeds will last for up to four years when stored in a cool, dry area.

5.6 Sweetcorn

We have been saving our own sweet corn seed for a few years now. It is easy to do and due to the fact that getting commercial open pollinated (non-hybrid) seed is impossible unless you go to one of the heritage seed suppliers like Eden seeds or Greenpatch Seeds, we need to maintain a supply. We don't grow a huge amount of sweet corn but a couple of crops a year is nice and you can't get corn any fresher or sweeter than the corn from your own patch.

To maintain genetic purity of your corn it is important to make sure that there is at least 500 metres between your crop and any sweet corn crop your neighbours might have or that they plant before or after you do so pollination won't be happening at the same time. In practice the 500 metres is probably not necessary because corn is wind pollinated and a surrounding (unless it is a very close neighbour) crop is unlikely to be upwind from yours at just the right time. All of the buildings and other obstructions in the urban environment will also reduce the likelihood that your corn will be pollinated by their pollen.

Pick the juiciest, earliest cobs from your strongest, tallest plants and mark them (tying ribbon around them works) so that rather than eating them like you really want to, save them for seed. Leave them on the corn plant until the outer leaves are nicely dry and white. Then harvest the cobs and pull the outer leaves that protect the kernels back and hang them up out of mouse reach to let them dry out fully for a couple of weeks.

Once the corn kernels are quite shrivelled and dry, you can remove them from the cob. I do this by giving the corn cob a Chinese burn, ie wrap both hands around the middle of the cob and twist each hand in different directions. The kernels should come away easily from the cob so once the removal has started just use your fingers to detach any remaining kernels from the cob.

To clean the seed, just drop the seed from one container to another in either a stiff breeze or in front of a fan, or while you blow on the stream of dropping seed. Any trash or silk will be blown away and you will be left with clean seed. I generally leave it in an open container for another two weeks or so to ensure it is fully dried out, then put it into paper envelopes or plastic bags for storage. Don't forget to mark the variety of corn and the date harvested on the envelope or bag so you don't forget. A couple of cobs worth of seed will net you enough to plant out a reasonable size back yard for at least one crop. Sweet corn will usually only remain viable in storage for a couple of years so grow your variety regularly and share it with your friends too.

5.7 Peas and beans

If you are just starting out on your journey with seed saving then peas and beans are a good start for a number of reasons –

- They are large and easy to find and handle
- They dry out naturally and preserve well
- They don't require any special processing
- They are quick to produce, and you can harvest a suitable amount in one season

Beans are particularly good because the seed will stay fertile for 5 to 10 years and they do not easily cross pollinate whereas broad bean seed may only last 1 year (4 years in a cool dry place) and you will need several hundred metres between varieties to prevent cross pollination. Pea seeds will last 5 years in storage and because the plants are mainly self-pollinated you only need a tall crop between rows to prevent cross pollination between varieties.

To save the seeds identify the high yielding plants and stop picking the pods and allow them to dry on the bush or vine. If there is any evidence of the bush or vine becoming diseased, particularly with a virus like blight, or if the plants don't grow true to type,

remove these plants from the patch and don't save their seed. Leave the pods in place until they are dried off and are brittle, then harvest them and remove the seed from the pods, for a "backyard" amount of seed this is a good night time job in front of the TV.

Once the seed is removed from the pod, place it in a glass jar labelled with the type of plant, the variety and the year the seeds were harvested, seal and store in a cool dry place. Easy, peasey!

5.8 Give Peas a chance

We grow peas through the winter (as you do) on circular trellises (construction details are available **here** and **here**). Inevitably, some pods get missed and dry out on the vine. These can be harvested later for eating as dried peas or as a basis for seeding the next years crop, but finding the pods and extracting the seeds can be tedious and time consuming.

Ready to harvest the seed!

While I wasn't really looking for an answer to my problem, I found one from history. We were watching the UK documentary series 'Tales from the Green Valley' where a team of archaeologists live and work on a farm in the UK as it would have been in the 1600s. As part of their activities, they raised a pea crop then needed to harvest it once it had dried off, and they did that using a flail. Bingo!

If you haven't come across the idea before, a flail is basically a long stick connected to a shorter stick by a flexible joint of some description be it leather, chain, fabric or whatever. By gripping the longer stick on can hit things on the ground with the shorter stick so that the shorter stick is level with the ground and can apply more force and over a larger area. I have seen them used with wheat but had not thought of peas!

Making the Flail

This would be experimental, so I wanted to use what I had on hand, and I had an old and somewhat decrepit broom handle 1200mm long x 20mm thick as a base. I cut it 400mm from the end so that the flail part would be 400mm long and the handle would be 800mm long. I did have some reservations as to whether the wood would be heavy enough to do the job, but this was an experiment, so……

Basic raw materials

Completed

Flexible join closeup

To join the two I cut a couple of denim strips off a dead pair of jeans, screwed one end of a denim a strip onto the end of the flail, looped it over and screwed the other end to the flail, I then did the same thing with the handle, but first looping the handle strip through the flail strip then securing the free end back onto the handle with a screw. Job done.

Using the flail

I dragged out a fabric drop cloth from the shed and spread it out on the lawn, then cut the pea plants off at the ground (leaving the nitrogen rich roots in place to rot down and fertilise the soil) and dragged everything over to the cloth. I removed all the pea vines from the trellis and placed them on the cloth and proceeded to beat the tar out of them with the flail. The flail worked as advertised and within a few minutes all the pods I could find had disgorged their contents onto the drop cloth. To be fair, a few had bounced off the cloth due to my enthusiasm but they didn't go far and were easily recovered.

Application of the flail

Pea vines removed

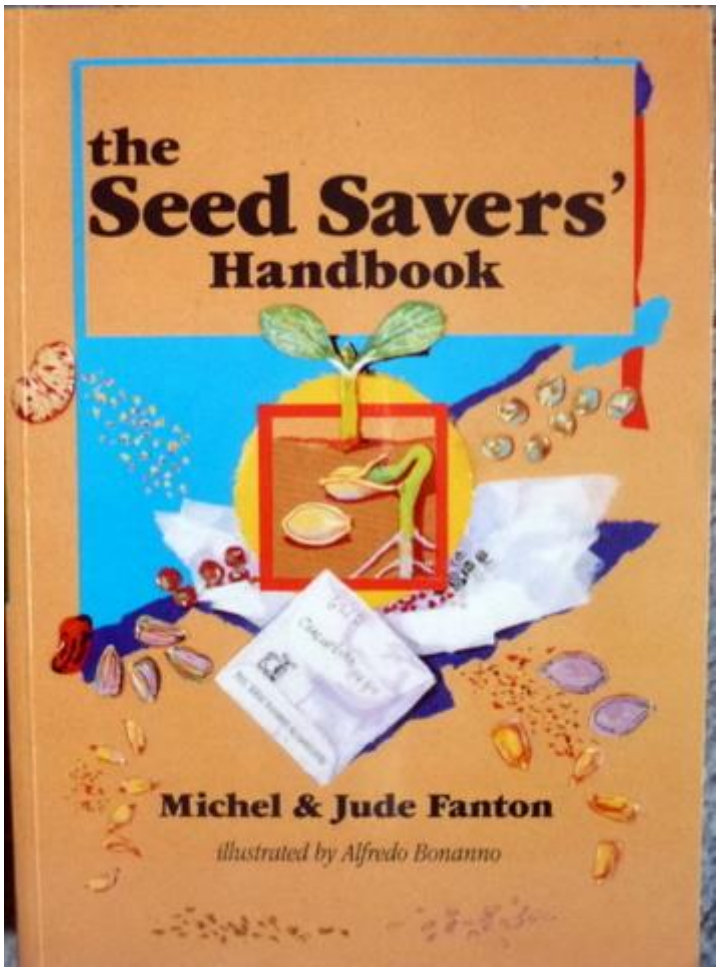
Remainder concentrated together

I removed the dried-out vines from the cloth and after inspecting them consigned them to the compost, leaving the peas, leaves and some other chaff on the cloth. I gathered the cloth edges up to the middle then removed all the light chaff by hand and placed it also on the compost. The remaining peas and chaff was placed on our garden sieve, which the peas remained in while most of the lighter trash fell through or was blown off by my huffing and puffing.

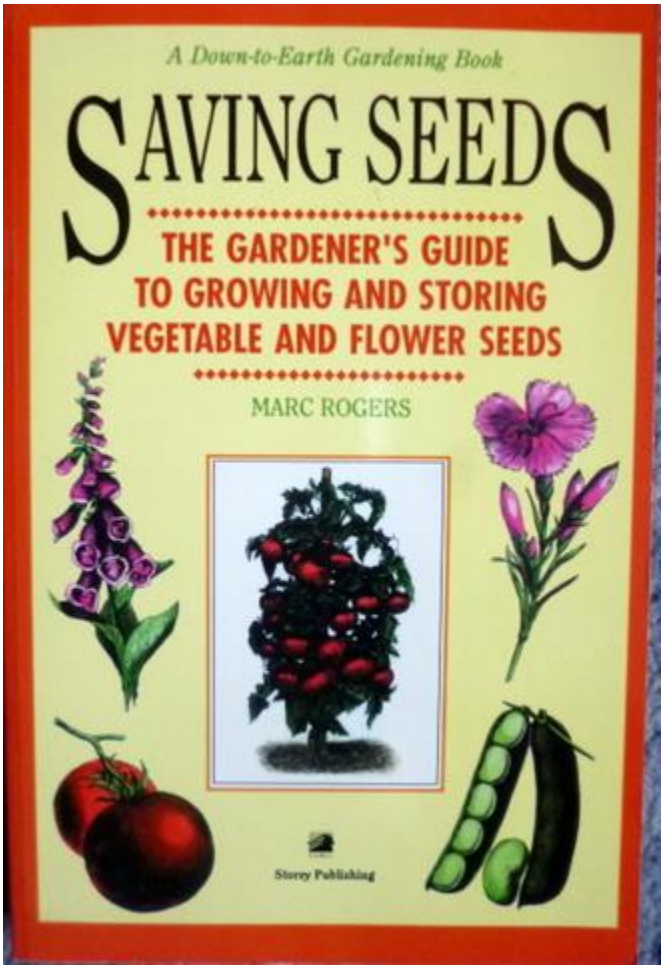
We have peas!

In the end the process only took 5 to 10 minutes and was considerably more fun than hunting through the vines and splitting open the pods. If I were using the flail more than a couple of times a year I would probably construct something less experimental and more robust, but as it is it works well.

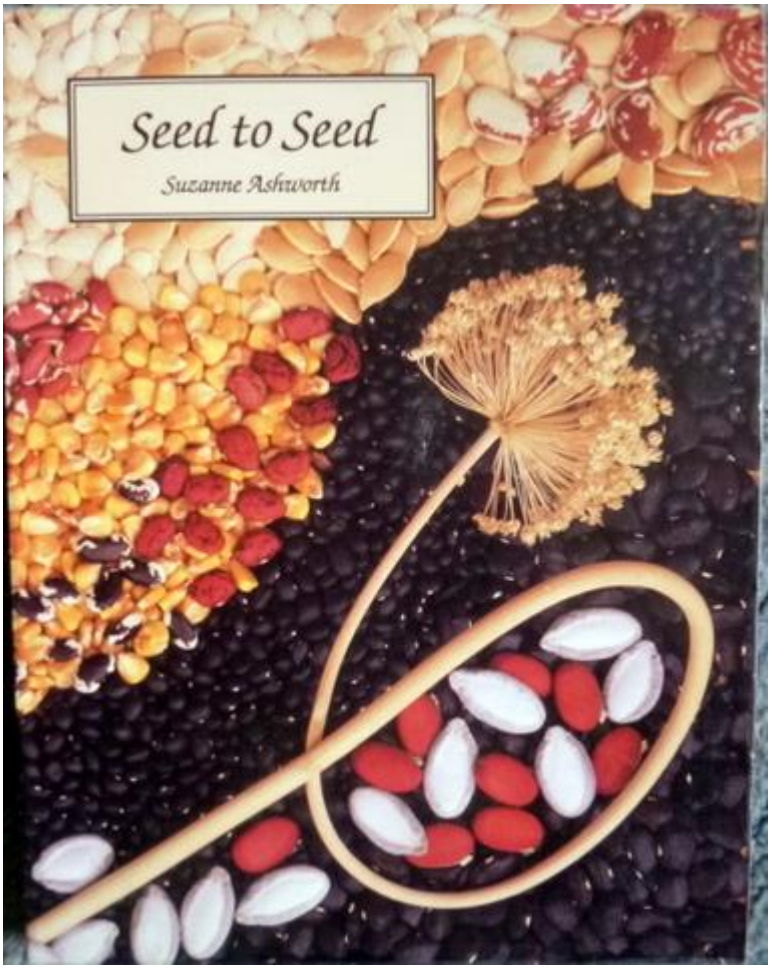
6.0 Resources



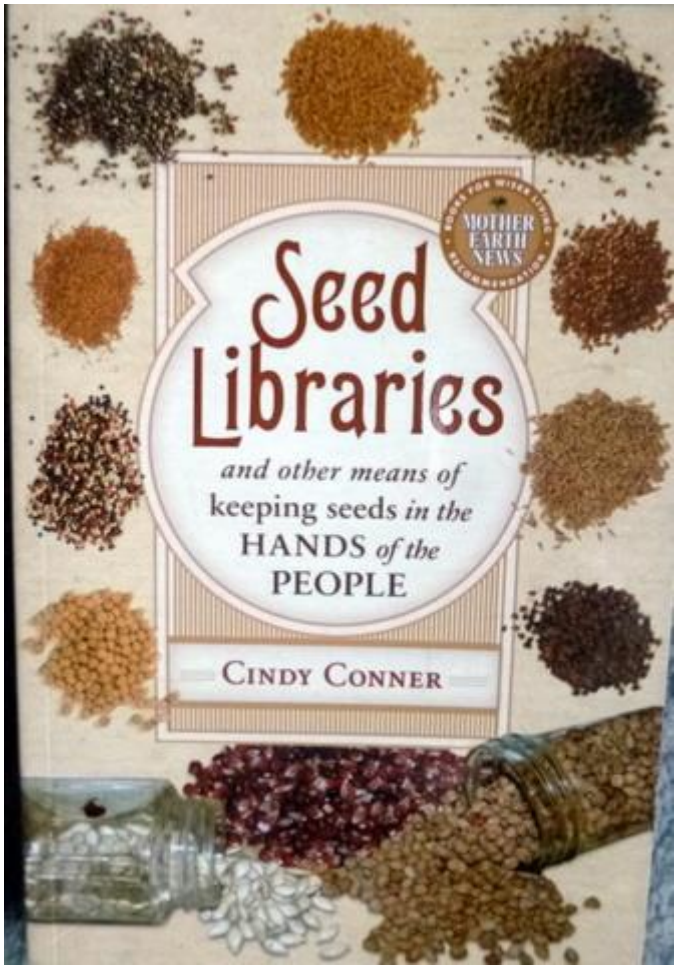
The Seed Savers' Handbook – Michel & Jude Fanton – Seed Savers' Network (AUS) 1993 ISBN 0 646 10226 5 – This book was written by the founders of the Australian Seed Savers' Network and is the seminal work on the subject of seed saving. Part one of the book covers the issues, about the seed savers' network and the importance of seed saving and biodiversity. Part two covers the practicalities around seed saving – which seeds to save, purity and production, selecting and collecting seed, drying and cleaning seed and planning a seed garden. Part 3 is the technical bit of how to save seeds of 117 vegetables, culinary herbs and edible flowers. No photos, some line drawings.



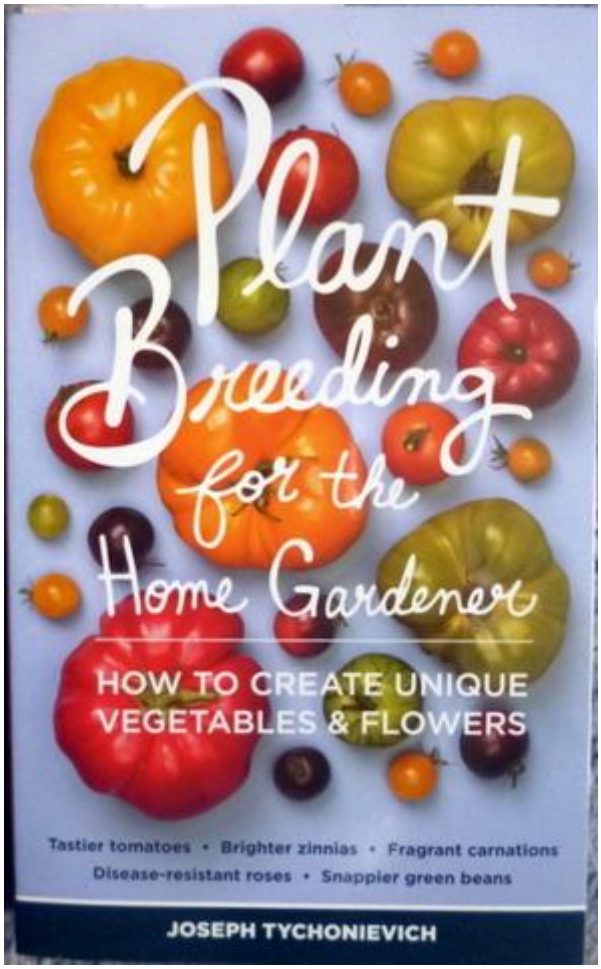
Saving Seeds – Marc Rogers – Storey Publishing (US) 1990 ISBN 0 88266 634 7 – Part one of this book gives you basic information on the theory and practice of seed saving including why you should save seeds, what annuals, biennials and perennials are, pollination, collecting, extracting, drying, testing and storing seeds. Part two covers seed saving of vegetables by twelve categories, listed by plant family. Part three covers how to save the seeds of 61 flowering ornamentals. A few black and white photos and line drawings.



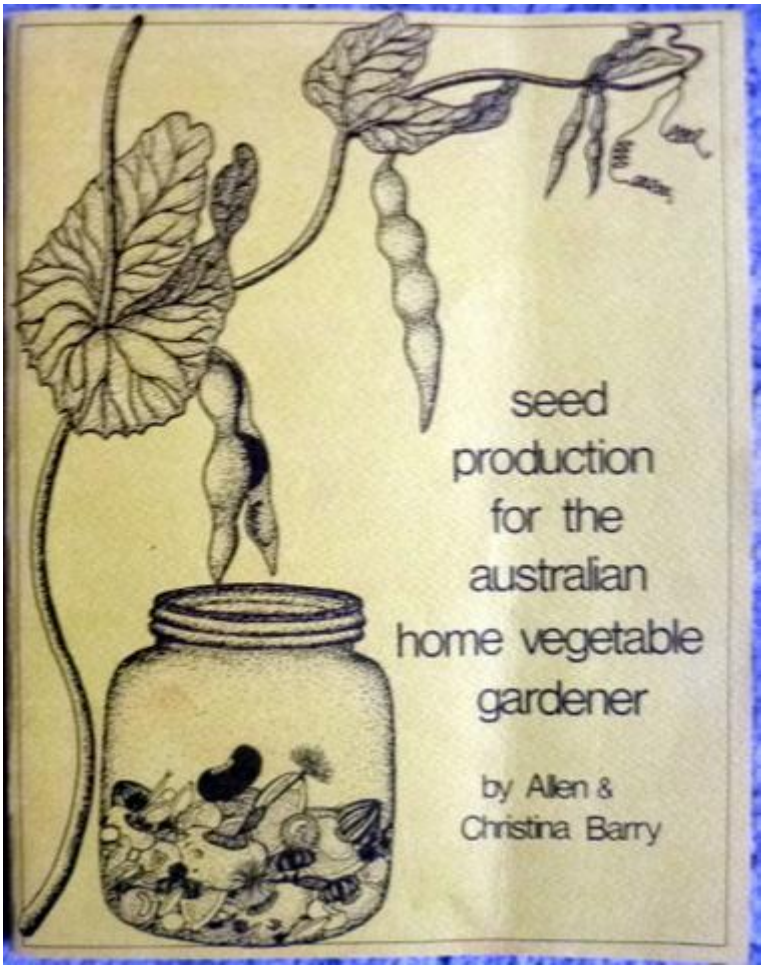
Seed to Seed – Suzanne Ashworth – Seed Savers' Exchange Inc. (US) 1991 ISBN 0 9613977 7 2 – Section One covers the theory of vegetable seed saving such as why we should save seeds, botanical classifications, pollination and flower structure, maintaining varietal purity, cleaning and storing seeds. Section 2 Covers how to save seeds for a series of vegetables divided up into the 8 most common vegetable families, including 127 individual vegetables. Section 3 covers other families with vegetable members – 12 vegetable families including 23 individual vegetables. Some black and white photos.



Seed Libraries and other means of keeping seeds in the hands of the people – Cindy Conner – New Society Publishers (CAN) 2014 ISBN 978 0 86571 782 4 – As the title would suggest, this is not a technical book about the process of saving individual seeds, although there is a chapter on seeds themselves, how to test them, where to find them etc. The book starts off with a discussion of the seed saving movement and an in-depth analysis of why we should save seeds. The main thrus of the book is then about setting up a seed library, who to partner with, how to get started, packaging seed, attracting a patron, keeping things going and how to run a seed swap. There are a series of colour photo pages towards the front to be book, and a smattering of black and white photos throughout the rest of the book.



Plant Breeding for the Home Gardener – Joseph Tychonievich – Timber Press (US) 2013 ISBN 978 1 60469 364 5 – While this is not strictly a seed saving technical book it does give good information about how to use seed saving techniques (among others) to develop your own varieties. The book starts out with a brief history of plant breeding and moves on to how to develop goals for your plant breeding program, how to cross pollinate plants, why genetics matters, evaluating and selecting favourite varieties. The last two chapters cover advanced plant breeding techniques and a series of examples of how to breed selected flowers (8 types) and vegetables (6 types). There is very little in the way of illustration, just a few line drawings.



Seed Production for the Australian Home Vegetable Gardener – Allen & Christina Barry – Henry Doubleday Research Association (AUS) 1977 ISBN 0 9596360 0 5 – At only 40 pages this is more a pamphlet than a book, but is still contains a lot of good information. Chapter 1 covers why we should save seeds, chapter 2 covers the botanical classification of common vegetables and chapter 3 covers the flowers and pollination. Chapter 4 covers choosing a plant for seed, isolation distances and data for 29 vegetables. Chapter 5 covers dormancy and storage of seeds. No photos, some line drawings.

Appendix 1

Seed Inventory					
Date Conducted:		Date of Last Update			
Vegetable	Variety	Amount	Source	Harvest Date	"Sow By" Date