THE PICTORIAL GUIDE TO SEEDS OF THE WORLD

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An Introduction into the Collection, Cleaning, and Storage of Seeds

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The Pictorial Guide to Seeds of the World:
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Disclaimer:
Plants have many ways in which they protect themselves from damaging organisms. This protection is found in thorns, sap, toxins, etc. Although the collection, cleaning, and storage of seed can be a rewarding experience, the author takes no responsibility for injury or illness that results from these activities.

CONTENTS

INTRODUCTION

Seeds are an exciting and beautiful element in gardening. The vast gardens that can be created from just a handful of these treasures can give a great sense of achievement to a gardener. Although plants can propagate by other means, such as bulbs, plantlets, or division, seeds are the principal way in which they reproduce. For this reason, it is seeds that are of interest in this book.

An incredible variety of seeds exist, from the microscopic seed of the aquatic duck weed (*Lemna* sp.) to the large tropical coconut (*Cocus* sp.); from small round seeds to the silk-tufted cylindrical seeds of the desert rose (*Adenium* sp.), with an infinite variety in between.

Seeds are imbued with numerous strategies designed to transport or distribute them around the countryside. For example: the winged seeds of maples spin like helicopters as they fall; delicate seeds with tufts of hairs, like the thistle, can be blown hundreds of kilometers on the wind; and the large ocean-traveling seeds of the coconut float to new destinations.

Some other strategies for distribution are found in the fruits of plants. Some have fleshy fruits which are eaten by birds and animals. Others have capsules that eject the seeds explosively. Others yet produce seeds that attach themselves to passing objects or animals to be transported over long distances.

This book covers the basics involved in the collection, cleaning, and storage of seeds. Although bulbs, corms, and other plant parts can be collected and stored, they are not covered here, so as to not detract from the focus of this volume.

As the number of plants collected and grown around the world is truly staggering, it is impossible to cover them all in any single book. Here, we discuss the most common plant families, including examples of the types of seeds that may be encountered. Where possible, several genera within each family are discussed.

This book uses a system whereby plant family names are all written in capitals (LAMIACEAE), the common names that are not written within the text are in bold (**Mint**), and the botanical names are written in italics (*Mentha*).

In botany, it is the characteristics of the flowers that determine the genera and family to which a plant belongs. This can become extremely complicated, so this book makes no mention of the flower types or their individual differences. However, it is interesting to note the similarities of the seeds contained within each family.

We also discuss a number of methods that can be utilized in the collection of seeds. No one method can be used to collect them all, so different techniques have been developed over time to successfully gather all of the species that are encountered, both in the home garden as well as in the field.

The same development of techniques applies to the cleaning of seeds. There are a number of ways in which common household items can be used effectively to clean seeds. Several of these items are explained in Chapter 7: How to Thresh and Clean Seed.

Storing seeds for use next season can be fraught with hidden problems, such as molds and seed-borers. Chapter 8: The Storage of Seed explains some appropriate methods and procedures that should be followed to avoid disappointment and loss of seed.

For those who collect and save seeds, a commonly-asked question is, "Why do you want to save this seed?" The real question should be, "How *long* would you like to store this seed?" Here is why: many seeds are short-lived, such as the abiu, *Pouteria caimito*, mango, *Mangifera indica,* and the lilly pilly, *Syzygium* species. These must be planted within a week or so of collection, but can be stored in the refrigerator for a month or more.

For the gardening enthusiast, this time frame may be too short, so seed with an extended life span should be considered when collecting your own seed. Some species, like the lotus lily, can be stored for over one hundred years, whereas most vegetable, herb, and flower seeds will last for 2 to 3 years, sometimes more.

Most seeds collected from the garden are suitable for storage from one year to the next, and many of these can be successfully stored at home for many years.

Although most seed can be maintained in a viable state for many years, it doesn't always mean that the seed collected will sprout a plant that is the same as the host plant. To give an example of this, consider the mango, *Mangifera indica,* or the Java plum, *Syzygium cumini.* Both produce two types of seed: a monoembryonic seed and a polyembryonic seed. A monoembryonic seed has only one embryo and may produce a tree with unknown characteristics, such as the flavor and the general shape and size of the tree. A polyembryonic seed has two or more embryos and produces a plant that is identical to that from which the seed was collected, including the flavor of the fruit and the characteristics of the tree. Although genetic diversity can always come into play, polyembryonic seed generally produces true-to-type seed.

Other considerations to make when collecting seed are its quantity and the number of plants from which it is collected. Collecting seed from only one fruit on one plant can have unforeseen consequences.

An example of possible consequences can be demonstrated with the blue Aztec popping corn, *Zea mays everta.* The seed is a beautiful blue color, but if seed is collected from only one cob each year and replanted, it will soon lose its blue coloring due to a lack of genetic diversity.

The collection of seed is not always a simple matter, and it is very important that, when possible, you gather seed from several plants to maintain their genetic stability.

Size does matter, and in the case of seeds, it is always best to collect seed from the biggest fruit or healthiest plants. The exception would be if you are after a specific genetic trait. For example, seed selection would vary for a plant desired for Bonsai or a plant that is usually a climber which you would like to produce as a bush variety.

Collecting seeds from small fruit, especially from only one plant, can produce smaller plants with smaller fruit. This is often referred to as "line- breeding" and can, over time, lead to complete genetic breakdown and a loss of viability.

What are Fruits?

When considering plants, a fruit is any structure that produces seed, but not always something that is edible. The following pages outline the types of fruit that will be encountered in the collection of seed.

One of the first things that should be learned in the collection of seed is the differences between the various fruits that you will encounter, as this will determine how to collect and clean the seed.

The study of fruits can be highly complex and many botanists still argue over the actual groupings to which many fruits belong. This is due to the complexities of their flowers. However, understanding this issue fully is not a requirement to successfully collect seed.

In the pages that follow, we have tried to keep the major groupings as simple as possible. There is no advantage to the keen gardener becoming confused or bogged down over technical differences.

The methods used for the collection of seed do not require an intimate knowledge of fruits. Knowing the basics as outlined here will aid in the collection, cleaning, and storage of viable seed.

Achene: An achene is a small, single-seeded, dry fruit usually formed in clusters of the ASTERACEAE (daisy) family. Fruit of this group include the sunflower, marigold, and the dandelion.

Marigold *Calendula officinalis*

Milk Thistle *Sonchus oleraceus*

Berry: A berry is a fruit with seeds contained within a fleshy or dry pulp. Berries contain two or more seeds, and include the tomato and kiwi fruits.

Kiwi Fruit *Actinidia delicioca*

Tomato *Lycopersicon lycopersicum*

Burr: A burr is a spiny fruit that can cling to passing objects as an aid in dispersal. Burrs are found in numerous plant families and include species of amaranth, aster, and daisy.

Cobbler's Peg *Bidens* sp.

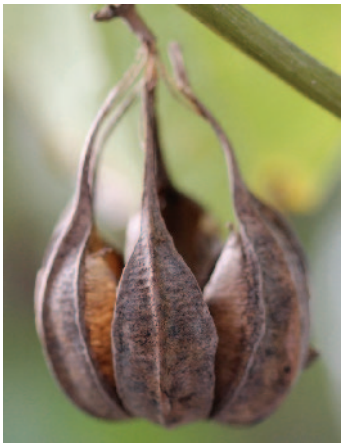
Noogoora Burr *Xanthium* sp.

Capsule: A capsule is a dry seed case that opens along several seams and can be papery thin to hard and woody. Some open at maturity, releasing their seeds, while others remain closed. Capsules can contain anything from one to over one hundred seeds and are found in many plant families.

This large bush potato shows a typical papery capsule.

Bush Potato *Operculina aequisepala*

The *Aristolochia* contains the seeds within a capsule which resembles an upside-down parachute.



Indian Birthwort *Aristolocia tegarla*

The African mahogany has a hard, woody capsule from which the seeds can fall freely.

African Mahogany *Khaya senegalensis*

Many capsules split along several seams upon drying, like this **salad mallow**, *Corchorus olitorius*.

Cone: A cone is a woody structure made up of individual segments which each release one seed. Cones are found in conifers and some other flowering plants. Examples of cones are pine and sheoak.

Radiata Pine *Pinus radiata*

Swamp Sheoak *Casuarina obesa*

Drupe: A drupe is a fleshy or dry fruit containing one seed, often referred to as a "stone," hence the origin of the term "stone fruits." These include the plum, nectarine, avocado, and apricot. Some seeds can produce two plants, and rarely three.

Avocado *Persea gratissima*

Plum *Prunus domestica*

Macarthur Palm
Ptychosperma macarthurii

Drupelet: A drupelet is a small drupe, such as an individual segment of a blackberry or raspberry.

Etaerio and Sorosis: These are aggregates or fruits from either a single flower or a group of flowers. Etaerio fruits include the raspberry, blackberry, and strawberry. Sorosis fruits include the mulberry and pineapple. For the purposes of this book, the differences between these fruits is of little importance.

Strawberry *Fragraria vesca*

Unripe **Mulberry** *Morus* sp.

Follicle: A follicle is a dry woody capsule that opens along one side only. These may occur singularly or in clusters. The seeds can range from light, feathery seeds that can float with the wind, to thin winged papery seeds, to large beans, and anything in between.

Bush Banana *Marsdenia australis*

African Tulip Tree
Spathodea campanulata

Grain: "Grain" is a term used to describe the husk-covered seeds from grasses (cereal crops). Many are important agricultural crops that sustain the vast populations of the world.

Sorghum
Sorghum bicolor

Rice
Oryza sativa

Barley
Hordenm vulgare

Wheat
Triticum aestivum

Hesperidium: A hesperidium is a berry with a thick rind and is made up of segments. These are fruits of the citrus family and include the orange, mandarin, lemon, and many others.

Grapefruit *Citrus paradise*

Mandarin *Citrus nobilis*

Hip: A hip is a term used to describe the fruit of a rose. It is essentially a dry berry.

Rose Hip *Rosa* sp.

Legume: Legumes split into two equal halves upon drying. Legumes include all the beans and peas. They can be thin and papery, or thick and woody. The crab eye vine and bauhinia are examples of legumes.

Crab Eye Vine *Abrus precatramia*

Bauhinia *Lysiphyllum* sp.

Nut: A nut is a woody fruit, often with one seed, that does not open readily. Most authorities lump nuts in with drupes. For the purposes of this book, they are listed separately, as nuts generally do not have a fleshy outer covering.

Pecan *Carya illinoensis*

Chestnut *Castanea* sp.

Nutlet: A nutlet is a very small nut, often found in grasses such as the seed of sedge *Cyperus* sp.

Sedge *Cyperus* sp.

Pepo: The pepo is a berry with a hard rind. This includes all of the cucurbits, such as watermelon, pumpkin, squash, gourd, and cucumber.

A collection of **Pumpkins** *Cucurbita* sp.

New Guinea Bean
Legenaria longissima

Pome: A pome is a fruit with seeds that are encased in a tough casing. The casing is then covered in a fleshy fruit. Pome fruits includes apples and pears.

Apple
Malus domestica

Pear
Pyrus communis

Samara: A samara is a dry, winged fruit that does not open at maturity. Samaras include the maple, ash, and elm.

Rosewood *Tipuana tipu*

Stinkwood *Gyrocarpus americanus*

Silique: These fruits are all from the mustard family. All have dry, woody pods with a partition down the center. The pods open at maturity and release their seeds as they begin to dry.

Mustard *Brassica juncea*

Syconium: These fruits are from the fig family. They are round to pear-shaped, and can be shades of red or brown to black when ripe. The minute flowers are located along the inner wall of the fleshy structure. A hole in the bottom of the fruit allows entry by pollinating insects. Once pollinated, the individual flowers can grow into small single-seeded drupelets.

Fig *Ficus* sp.

CHAPTER 1
THE COLLECTION OF SEED

Seed should be collected when the weather is fine and the plants are dry. However, in the real world, this is not always possible. All too often weather conditions are more conducive to the dispersal and germination of seed rather than collection by an avid enthusiast.

If you have been able to collect seed pods or capsules when they are dry, then it is only a matter of cleaning. However, if the collected material is wet or damp, then mold may become a real issue. It can easily ruin your hard work. Wet collected material can be spread out on a tarp in the sun to dry. If this is not possible, spread them near some sort of warmth, such as a heater, and allow them to fully dry prior to cleaning.

Removing seeds from fleshy fruits can be anything from simple to very difficult, depending on the plant from which the fruits were collected. Many of the stone fruits have a hairy seed that can be difficult to clean, whereas the Lychee *Litchi chinensis* or citrus have seeds that are easily removed from the flesh.

When transporting seed overseas or across borders, a declaration of the species and amounts is often required, as some species are prohibited. If the seed is not thoroughly cleaned it may be confiscated. Under these conditions, it is imperative to remove all clinging materials from the seed.

When seed is required for personal use and cleanliness it not so important, keep in mind that insects and molds can still become real issues, so it remains important to clean all seed as thoroughly as possible.

If you are collecting seed on government land i.e., forestry, national parks, land reserves, etc., you may required to obtain a collection permit. A complete list of the species being sought is required prior to a permit being approved, and in many countries a royalty payment is payable on the volumes collected.

There are a number of ways to collect seed; it is a matter of selecting the one which works best for you and the plant species from which you are collecting. The following are methods that work well in a variety of situations.

1) Using a tennis racket, long pole, or stick and a ground tarp is one method. These items are very effective on plants that have seeds or pods which will dislodge easily.

Once you have selected the desired plant, place the tarp(s) around the base of the plant, either on the ground or grass cover, depending on the situation. If the ground is sloping or uneven, it is best to make dips in the tarp where the seeds, pods, or any fruit can accumulate.

Now firmly strike the plant with the tennis racket, pole, or stick without breaking branches or causing too much

damage. If the seeds will not fall freely, then they are not yet mature or the wrong collection method is being employed.

If the branches are struck too violently, the seed can be thrown away from the tarp or flick back and hit you in the face. After being injured several times, you will soon learn to moderate your striking action.

2) The use of a blower-vac i.e., garden vacuum cleaner, is extremely useful for sucking up seed pods from small shrubs and herbaceous plants such as amaranth, daisies, and other groups. However, the blades of the blower-vac can cause some damage to the seeds, especially if they are soft.

Select plants that are dry, with fully matured seeds. Undertake a sample run first to ensure that the seeds can be collected with minimal amounts of damage.

Have several bags available for storing the collected material, as large amounts of chaff will be sucked from the plants close by. All of this chaff will require separation later.

3) Picking seeds or fruit individually requires a bucket or two; these are essential for this collection method, as collecting large amounts of seed by hand or only small amounts from a few plants can become cumbersome. You can use bags in some occasions, but they are often more annoying than helpful.

Usually it is unwise to collect seed from the ground, as it is contaminated with molds and insects. With many large seeds or fruits this method is unavoidable, as many of them remain unripe until fallen and often the fruit is simply too high to obtain safely. Shaking the tree often dislodges more fruit, but be careful to avoid being struck by them as they fall.

4) The use of a cherry picker or elevated work platform to collect seed is fantastic if you can afford it. This method is used by several full-time seed harvesters, but is out of the question for most people who are collecting only a few seeds from selected plants.

5) Using a ladder and hand secateurs in the collection of seed can be dangerous due to unstable ground surfaces. This method should be avoided whenever possible. Use an extension picker rather than a ladder.

6) Using extension pickers or pole scatters is an excellent method of collecting fruit and seed from high up in trees. This method also helps you to avoid the problems that arise when collecting seed from the ground.

CHAPTER 2
VEGETABLES

Vegetables are the plants we eat to sustain everyday life, and represent only a few of the many plant families. Of these families, only a handful of genera are utilized by man to sustain the vast populations of the world.

Vegetables have developed from a handful of ancient predecessors to become the tens of thousands of varieties and cultivars we know today. Some examples of vegetables that have been developed into hundreds of named varieties are tomatoes, corn, and beans.

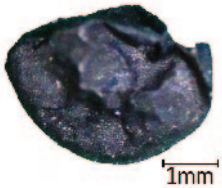
Many people might assume that when a vegetable is ready for eating, the seed would be ripe. This is not the case for many vegetable species, such as beans, peas, lettuce, cabbage, squash, or zucchini, but it is true for most of the fruiting varieties, such as tomato, pumpkin, some capsicums, and aubergine (eggplant). Judging when the seed is fully mature can be a little tricky; even when a vegetable is ripe, the seed may require even more time to mature fully before it can be harvested. This is the case for zucchini and squash.

Family: LILIACEAE, ALLIACEAE
Common name: **Onion**
Number of genera: 30
Number of species: 670
Origin: Worldwide
Plants: All are herbs

The onions include C**hives, Garlics, Leeks**, **Onions, Shallots**, and **Spring Onions.** They produce one flower stalk per bulb upon maturity and have a cluster of flowers that are shades of purple. Each of these have the potential of producing a papery seed capsule if pollinated. There are three distinct segments for each of the papery capsules which split across the top as they dry.

The seed will remain within the dry capsules until disturbed by the wind or bumped by some passing object, such as an animal. The seed can be collected at any time after the capsules are dry. If the seeds are wet at the time of collection, ensure that they are spread out on a clean surface until fully dried to avoid attracting mold.

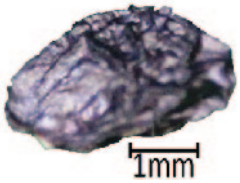
Chive
Allium schoenoprasum



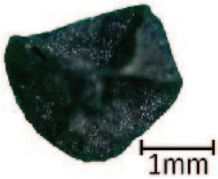
Onion
Allium cepa

Shallot
Allium fistulosum

Leek
Allium ampeloprasum



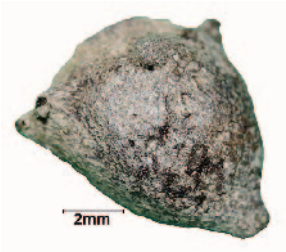
Garlic Chive
Allium tuberosum



Spring Onion
Allium fistulosum

Family: AIZOACEAE
Common name: **Carpetweed**
Number of genera: 150
Number of species: 2500
Origin: Tropical and subtropical
Plants: Mostly herbs or low shrubs

New Zealand Spinach is in the carpetweed family. The fruit is a capsule that releases a cap or opens lengthwise upon drying. The seed is pea or comma shaped and may be pitted or have bumps. The seed is pale to dark brown. Collect the capsule as it dries but before it releases its cap or splits.



New Zealand Spinach
Tetragonia tetragonioides

Family: APIACEAE, UMBELLIFERAE
Common name: **Flannel Flowers**
Number of genera: 300
Number of species: 3000
Origin: Worldwide
Plants: Herbs with some shrubs

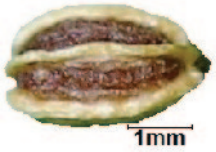
The flannel flowers include the **Carrot, Celeriac, Celery, Fennel**, and **Parsnip**.

Celery and fennel are grown for their leaves. Their succulent roots are harvested while still small, soft, and crisp.

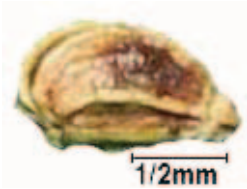
If seed is desired, the plants will need to be left in the ground until they are mature and the roots become hard, woody, and inedible.

These plants produce a flower spike containing a cluster of small insignificant white flowers.

The fruit is a thin, dry capsule, each having two seeds that separate upon maturity and are usually light yellow to brown. The seeds can be collected individually or the entire seed head can be cut from the plant and placed upside down in a fabric or paper bag and left to fully dry.

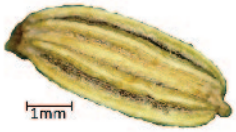


Celery
Apium graveolens dulce

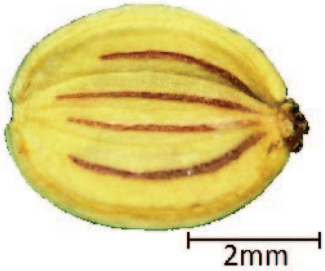


Celeriac
Apium graveolens reapceum

Carrot
Daucas carota



Fennel
Foeniculum vulgare dulce



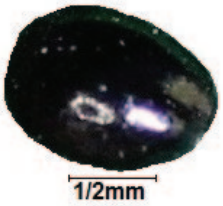
Parsnip *Pastinaca sativa*

Family: AMARANTHACEAE
Common name: **Amaranth**
Number of genera: 65
Number of species: 900
Origin: Tropical to temperate
Plants: All are annual herbs

The fruits are single-seeded capsules grouped together in a cluster at the base of the leaves. The seed can be white, brown, or black.

Amaranth is an important food resource in many countries around the world. The leaf and grain amaranth species are grown for both their leaves and their grain.

The seed can be harvested once the plants are mature. Either harvest the entire plant, or collect the cluster of capsules and place on a ground sheet. Allow a week or so to dry before threshing out the seed.

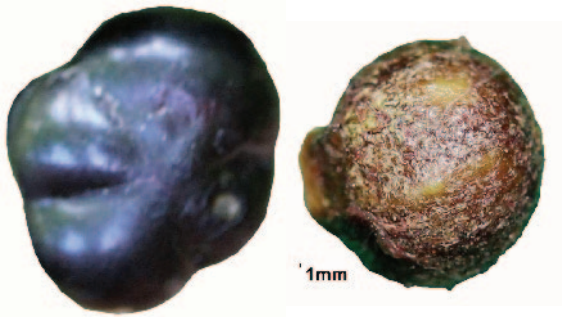


Vegetable Amaranth
Amaranthus gangeticus

Grain Amaranth
Amaranthus hypochondriacus

Family: BASELLACEAE
Common name: **Basellia**
Number of genera: 4
Number of species: 25
Origin: Tropical Northern Hemisphere
Plants: Herbs with some climbers

The basellia includes the vegetable **Ceylon Spinach**—thick, glossy-leaved annuals that produce clusters of purple-colored, bladdery drupes, each with a single seed. The seed can be collected by harvesting the clusters of drupes. The seed can be left within the dried fruit or the flesh can be removed using a sieve or a cloth.



Ceylon Spinach *Basella rubra*

Family: ASTERACEAE
Common name: **Daisy**
Number of genera: 1100
Number of species: 20,000
Origin: Worldwide
Plants: Annual or perennial herbs with a few trees and shrubs

The daisies are the largest plant family and include the **Artichoke, Burdock, Endive**, and **Lettuce**.

The fruit is often a group of closely-packed singular seeds called an achene. These are the well-known flowers known as daisies. There are some burrs and drupes, but these are not included in the vegetables.

The seed is often elongated, having grooves, pits, or wings along the edges and a tuft of long hairs at one end.

If seed is desired, the vegetables of this family should be left to "bolt" or "run to seed." The outer leaves can still be eaten; however, the inner section must not be damaged, as this portion is required to produce seed.

The single flower stem produces a cluster of flowers with numerous seed. Once the flowers dry out, the seed can be collected daily by picking each dried flower head. Alternatively, the entire stem can be collected once most of the flowers have died. To do this, cover the entire flower stem using a fabric or paper bag, holding the bag firmly closed below the flowering heads, and cut the stem. Tie the mouth of the bag to the stem and hang it upside down in a dry airy room.

Brown Mignonette
Lactuca sativa

Green Mignonette
Lactuca sativa

Artichoke
Cynara scolymus

Salsify
Tragopogan porrifolius

Cos lettuce
Lactuca sativa

Iceberg lettuce
Lactuca sativa

Endive
Chicorium endive

Burdock
Arctium lappa

Family: BRASSICACEAE, CRUCIFERAE
Common name: **Mustard**
Number of genera: 375
Number of species: 3200
Origin: Worldwide
Plants: Annual herbs with some sub-shrubs

The mustards include **Broccoli, Brussels Spouts, Cabbage, Cauliflower, Collards, Kale, Kohlrabi, Mustard, Radish, Swede**, and **Turnip**.

The fruits are cylindrical capsules with a partition down the middle called silique. The fruit dries prior to splitting into two equal halves releasing numerous round seeds. The seeds can be yellow, red, or brown to black in color. The pods can be collected individually once light brown and fully dry or the entire head can be covered with a paper or fabric bag and removed.

Cauliflower and Broccoli are grown for their edible flower heads. To collect seed from these plants, the flowering heads must be allowed to "bolt" or "run to seed." The flowers should produce pods that have between two to five seeds each.

Broccoli
Brassica oleracea italica

Cauliflower
Brassica oleracea botrytis

Cabbage, Collards, Kale, and **Brussels Spouts** are grown for their leaves and are generally collected whole. To collect the seed for Brussels spouts, leave several sprouts on the plant to

develop flower heads. The outer leaves of cabbage, collards, and kale can be harvested as required; however, the center of the plant must remain to grow and produce seed.

Rocket
Hesperis matronalis

Wongbok
Brassica pekinensis

Cabbage
Brassica oleracea capitata

Brussels Sprouts
Brassica oleracea gemmifera

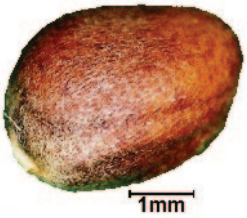
Tatsoi
Brassica navinosa

Walking Stick Kale
Brassica oleracea acephala

Collard *Brassica oleracea acephala*

Swede, Kohlrabi, Radish, and **Turnip** are grown for their roots, which are harvested while small and tender. If seed is required, the plants will have to stay in the ground for several more months or until the following year, depending on where you live. The roots will become hard, woody, and inedible before the flower stem matures and the seed can be collected.

Kohl Rabi
Brassica oleracea gongylodes



Radish
Raphanus sativus

Swede
Brassica napus

Turnip
Brassica rapa

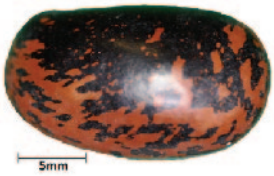
The actual **Mustards** are grown for their seed and are a spice. They have been listed in the chapter on herbs and spices.

Family: CAESALPINIACEAE
Common name: **Bean**
Number of genera: 150
Number of species: 2200
Origin: Worldwide
Plants: Trees and shrubs with some herbs and vines.

The fruits of beans grown as vegetables generally resemble the typical bean shape pods, with one to several seeds. The seeds are mostly kidney-shaped, but can be spherical to flat or oval, as well as cylindrical. They are generally white, reddish, grey, brown, or black and sometimes mottled and multi-colored.

The collection of mature seed from beans is a simple matter of leaving the required pods on the bush or vine until they are fully dried. Do not harvest the dried pods if they are wet or covered in dew, as they may become moldy and cause problems later. Place them in a labelled paper or material bag until they can be cleaned and stored properly. Do not store in plastic bags or buckets, as they can sweat and become moldy.

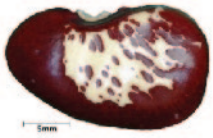
Adzuki Bean
Phaseolus angularis



Scarlet Runner Bean
Phaseolus coccineus

Blue Lake Bean
Phaseolus vulgaris

Poor Mans Bean
Dolichos lab lab



Madagascar Bean
Phaseolus lunatus

Snake Bean
Vigna unguiculata sesquipedalis

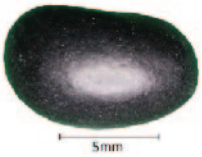
Faba Bean
Vicia faba

Lupini Bean
Lupinus luteus

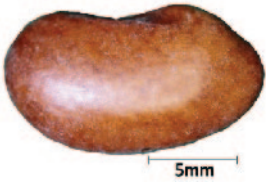
Andersons Wonder
Phaseolus vulgaris

Long Snake Bean
Vigna unguiculata sesquipedalis

Butter Bean
Phaseolus namus



Black Turtle Bean
Phaseolus vulgaris



Purple King Bean
Phaseolus vulgaris

Navy Bean
Phaseolus vulgaris

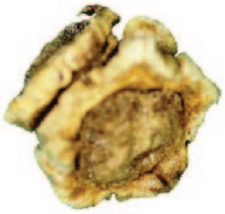
Broad Bean
Vicia faba

Black Eyed Bean
Vigna unguiculata

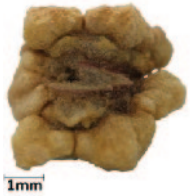
Family: CHENOPODIACEAE
Common name: **Goosefoot**
Number of genera: 100
Number of species: 1500
Origin: Worldwide
Plants: Small trees, shrubs and herbs

The goosefoot includes the **Beetroot, Chard**, **Silverbeet**, and **Spinach**. These plants are usually biannual and will normally "run to seed' on their second year, depending on the season and growing conditions.

The plants produce a flowering stem with numerous seed pods. Each pod will produce between two to five seeds, and each pod can be collected individually once they change color and begin to dry. If collecting the entire flower stem, use a fabric or paper bag, cover the entire flower stem, and hold the mouth of the bag firmly closed below the flowering head. Cut the stem. Hang the bag upside down in a dry, airy room until the contents can be threshed.

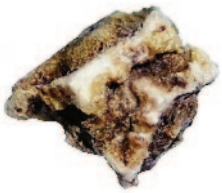


Top of seed



Side of seed

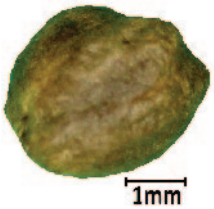
Beetroot *Beta vulgaris*



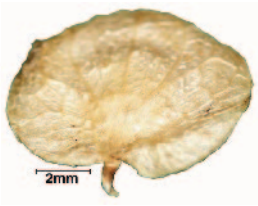
Top of seed

Side of seed

Silverbeet *Beta vulgaris*



Spinach
Spinacia oleracea



Orach
Atriplex hortensis

Family: CUCURBITACEAE
Common name: **Cucurbit**
Number of genera: 120
Number of species: 830
Origin: Tropical and subtropical
Plants: Herbaceous scrambling vines

In the vegetable category, the cucurbits include **Cucumber, Gourds**, **Pumpkins**, **Squash,** and **Zucchini**. The melons are listed in the chapter on fruits.

The fruit of cucurbits are known as pepo. Many of these plants produce fruits that are picked whilst immature. A mature zucchini is referred to as a marrow, and is excellent stuffed and roasted. For use in shops, melons and pumpkins are often picked green for transport and presentation.

If seeds are required, the fruit should be kept for an extra week or so to mature further. The seeds of the cucurbits will germinate within the fruit if the humidity is high over an extended period of time.

To collect seeds from cucurbits, cut the fruit in half and scoop out the stringy seed pulp. After the pulp has been removed, the seed can be cleaned from the pulp and left to dry. Clean the seed a second time before storing.

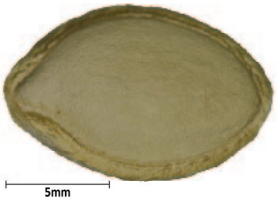
Pumpkins are best left on the vine until the section of vine with the fruit is dead. The stem of the pumpkin should be cut at least 2cm long. If the stem is broken off and the pumpkin is required

to be stored, fill the stem area with candle wax. The pumpkin should be placed in full sun for a week to toughen the skin; this greatly increases the storage time. As pumpkins cross-pollinate easily, do not plant more than one variety at a time.

Jarrahale Pumpkin
Cucurbita maxima

Jap Pumpkin
Cucurbita moschata

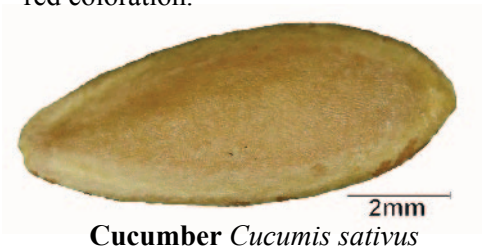
Squash and **Zucchini** are harvested and sold while still small and immature. To obtain mature fruit, it should be left on the plant until the vine is dead. This will usually provide seed that is fully matured. A general rule of thumb for collecting squash and zucchini seed is to leave the first fruit of each plant to go to seed. This will provide the largest fruit with the best quality seed and also leave the rest of the fruits on the plant available for harvest.



Zucchini
Cucurbita pepo

Globe Squash
Cucurbita pepo

Cucumbers are generally picked when immature and used to make pickles or eaten fresh. If seed is required, the fruit should be left on the vine until the fruit is fully matured and changes color slightly from a light green or white to either a dull cream, yellow, or orange-red coloration.



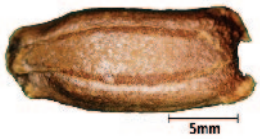
Cucumber *Cucumis sativus*

Gourds should be left on the vine until they go completely brown and are fully dried out. The seed is mature once the fruit is fully dry. The shell of the gourd is hard and often difficult to cut without the use of a saw. Gourds will cross-pollinate easily and care should be taken to grow only one variety at a time. The seed is viable for many years, so maintaining a modest collection of gourds shouldn't present a problem.

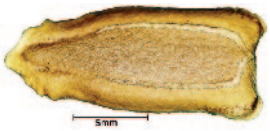
Dinosaur Gourd

Snake Gourd

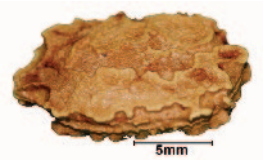
Legenaria siceraria



New Guinea Bean
Legenaria longissima



Bottle Gourd
Legenaria siceraria



Bitter Gourd
Momordica charantia

Luffa
Luffa acutangula