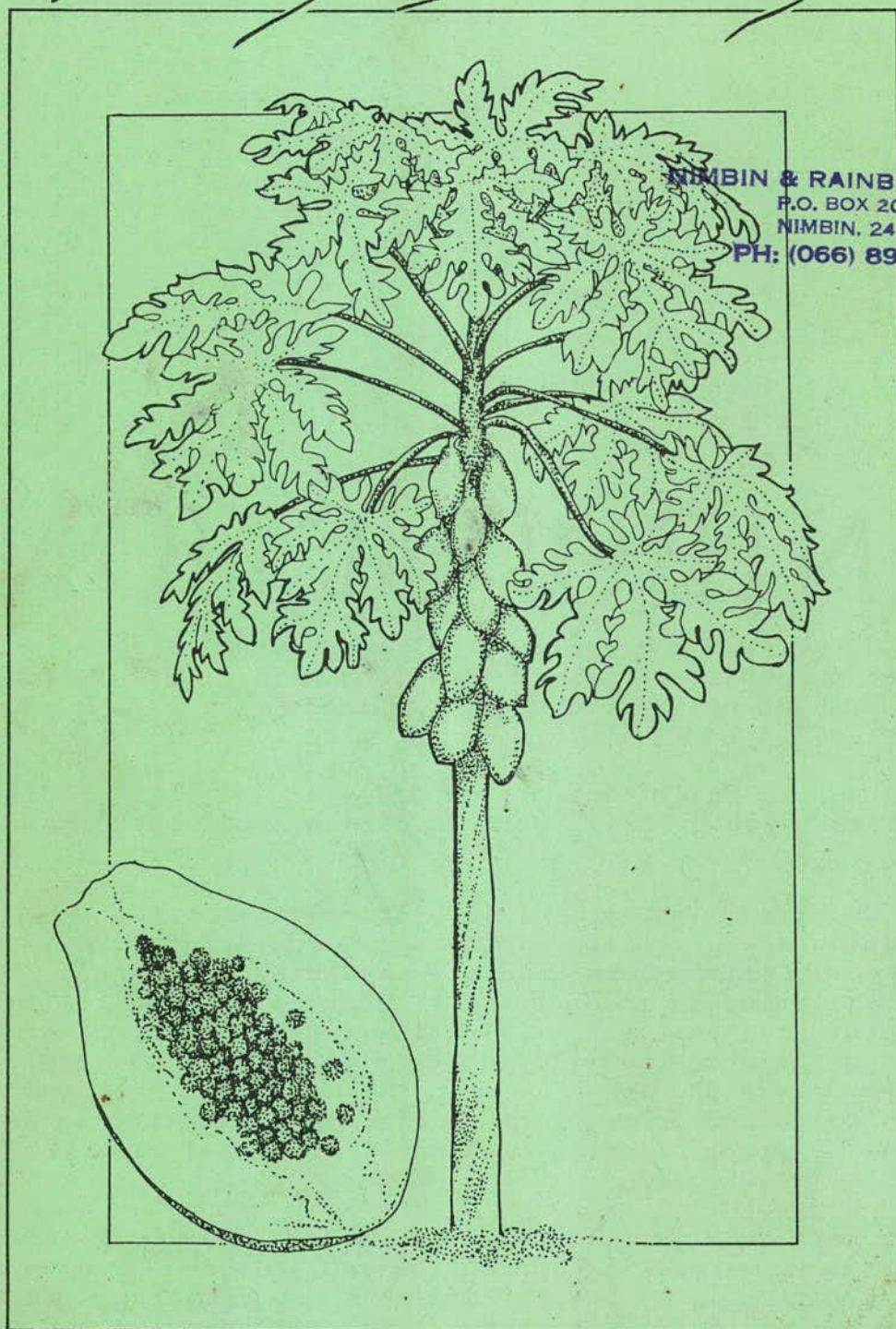


Autumn Bulletin '89



NIMBIN & RAINBOW NEWS
P.O. BOX 209,
NIMBIN, 2480
PH: (066) 89 1184

No 6

• the seed savers' network •
PO Box 105 Nimbin NSW 2480.

1 Contents

1	INTRODUCTION	12	Melons
3	CONFERENCE REPORTS	13	Watermelons
6	SEED SAVING NOTES	14	Cucumbers
7	ANNUALS	15	Gourds
	Beans		Potatoes
8	Runner Beans		Tomatoes
	Peas	16	Corns
	Lettuce	17	BIENNIALS
	Chinese Cabbage		Root Crops
9	Mustard		Celery
	Spinach	18	Onions
	Radishes		Greens
	Broccoli	19	SEED FLOW
	Sunflowers		Guidelines for offering
	Okra	20	OFFERING FORM
10	Capsicum	21	GO LOCAL
	Eggplant	22	SEED FILM
	Pumpkins and Squash		MEMBERSHIP

INTRODUCTION

The Seeds Savers' Network started three years ago with a small group of gardeners concerned about the difficulty of finding a good supply of non hybrid vegetable seeds for their garden activities.

Since then, we have found a rich diversity of local strains in Australian gardens. This could have been expected, considering the rich kaleidoscope of cultures that makes up Australia.

The Seeds Savers' Network is not just a grass roots association useful to the discerning gardener; it has become the first national collection and assessment of edible and garden varieties in this country. There are no Australian government organisations which collect the full range of these home bred resources, unlike in other countries, such as Hungary, France and U.S.A. True, we have collections of wheat, grains and fodder kept by the CSIRO, DPI and Ag Depts, and some of our universities, but few fruit and very few vegetable varieties.

What is particular to this project is that all local strains are kept by a network of apprentice and seasoned seed savers across each state, in a multitude of micro climates. When we discover a local strain kept by an old gardener, we can redirect it to many other gardeners in the same region for multiplying in order to keep the strain pure and alive. It is okay to grow a local strain in far away regions, but to make sure that the plant keeps all of its original characteristics, a similar climate is best so that the plant doesn't have to change genetically in order to adapt to new conditions, thereby losing precious genes.

INTRODUCTION

NIMBIN & RAINBOW NEWS
P.O. BOX 209,
NIMBIN, 2480
PH: (066) 89 1184

According to the October Australian edition of Time Magazine, the SSN people are very busy, so that when journalists came for an interview at a local venue, no one had time to talk to them..... Nevertheless, they printed something of our activities and talked about the number of varieties collected (all of the information came straight out of the pamphlet).

Time magazine had their facts right (except that we don't sell seeds as they reported): yes, the Seed Savers are flat out! Witness all the seeds of value that used to be in the hands of one gardener and are now in many gardens and soon will be backed up by local seed storage and bio regional gardens: the butter melon (a yellow watermelon), the Champagne watermelon, many tomatoes, beans, Californian Cream melon and many many others that have been successfully multiplied and returned for further distribution. Over 300 varieties were sent in over the last ten months.

To help all of us to do an efficient preservation job we have to follow the best technique known. In this issue we are adapting and reprinting some of the Seed Savers Exchange (USA) publications with the kind permission of Kent Whealy, their director. We will all benefit from their seed collecting experience. If your interest is strong enough to warrant the expense, subscribing to the Seed Savers Exchange is highly worthwhile: Write to Box 239 Decorah Iowa 52101 (approx. \$40 air mail)

Major national media have been covering the issues we raise so that more ordinary gardeners have heard that not all seeds are hybrids, and that some long-sighted gardeners have actually saved their seeds as a yearly routine for everyone to enjoy today. A thousand thanks to all of you who are the real quiet achievers.

It is good to hear that some members have offered seeds to charitable organisations, school fetes and markets. Seed savers stalls are getting organised at local venues. Please ask for any quantity of our pamphlets that you need (or photocopy the enclosed one). We have recently printed 5000 on recycled paper. Please pass the pamphlet to a friend or to your local newsperson.

The need for more ordinary gardeners to caretake seeds is paramount. In situ conservation is an efficient and inexpensive way to look after germ plasm collections: in people's gardens. Let's tap into that huge human resource.

The food industry barons may believe that they need bio-tech gene splicing, pesticides, etc. for filling the can of baked beans, but we know, as home gardeners, that simple local solutions are the go.

INTRODUCTION

SEED FILM

The script for the film we are making for primary students is completed. It is entitled "Plant Life" and we have submitted a proposal to The Children's Television Foundation for further funding. Full report on the last page of this newsletter.

SEED TRIP

We are going for a study tour with our children from April to September. The office will be run by the same volunteers that usually work with us. There will be Aine, Vivienne, Jacqui, Margaret, Kate, and Heather; Martha as a paid typist for publishing the newsletter; and Sonia doing the accounting. We have been invited to conferences and to visit some private and public germ plasm repositories. We will contact aid agencies which work in Africa, India and French Polynesia. Some more Australian contacts to supply tree seeds with a good provenance are needed. If you are collecting we can be your agent overseas or at least make initial contacts. Write to Box 105, Nimbin, 2480.

There will be plenty of seed news to tell you on our return.

*Jude, Michel
and volunteers*

CONFERENCE REPORTS

ECOLOGICAL AGRICULTURE CONFERENCE 1989

by Jude Fanton

Over five hundred people attended this Brisbane conference in February. The most pressing question seemed to be how to make money out of the general public's desire to have safer food. There were many broad scale farmers who were looking to replace fossil fertilizers with ones won from the sea e.g. fish and seaweed sprays - no worries, we'll rape the oceans next! The essential concepts of diversity and sustainability - of mixing your species of plants and animals, of trying to recycle within the farm, of using varieties less dependent on gross feeding did not seem to be tackled.

We finally made contact with individuals whose work has similar aims to ours: Sandy Fritz from NASAA; Chris Payn from 'Organic Growing' magazine; Gavin Dunn of the Biological Farmers of Australia; Senator Janet Powell whose proposal to have an enquiry into the usage of farm and veterinary chemicals has resulted in a Senate enquiry; and Lionel Pollard from Willing Workers on Organic Farms. As is often the case, it was these behind the scenes meetings that held the most value.

In our talks to the conference, and in personal contacts, we emphasised the need to conserve the genetic resources of our crops and animals in order to breed for resistance to disease and pests. Certainly it was heartening to see that the people who control large acreage are worried about the amount of poisons put onto our soils. Raising food at home seems to be the answer to the demands we put on broad scale agriculture.

CONFERENCE REPORTS⁴

FIRST ANNUAL SEED SAVERS' GATHERING

The Growing Safe Food Forum was held on the weekend of 29-30th October 1988, at the Tunttable Falls Hall, 8 km from Nimbin, NSW. It was a weekend of concentrated learning and teaching for all involved, with a series of short talks and workshops by experts in various fields. Topics included permaculture design, environmental education in schools, standards and marketting, raising healthy poultry and seed saving.

John Prakash Pereira, an entomologist from South India, was our first and key speaker. Discussing designing for natural pest control, he said that in an undisturbed forest where there are thousands of species all doing well, if one species overproduces, disease will attack and thus balance is maintained. Chemical pesticides eliminate such controlling factors and are a clumsy method of pest control as they can stimulate mutation of insects and change their normal balance thus encouraging extra eating and breeding and longer life.

As a general rule, the first insecticide application kills 90%; but the stronger 10% survive and mutate. The second application kills 50% etc. Prakash showed slides of his totally organic 200 acre coffee plantation where the forest is emulated with the stacking of species, vegetables being grown in small clearings. Most important is to provide habitats for predators on pests, e.g. trees and prickly shrubs for birds, umbelliferae (carrot, celery, fennel, parsley, dill, all going to seed) for predatory wasps. This would seem to be very relevant to seed savers who want to avoid the use of chemicals.

Malcolm Cox, Education Officer at the Brisbane Botanic Gardens, Mt. Coot-tha, spoke on "learnscaping" school gardens, bringing to children a natural wild environment, rather than the classically attractive ("pretty") one. There could be patches of weeds, trees with different bark structures and wilderness areas. Diversity in plant species and plantings of edible species would be most important. There is an upsurge in environmental education (the old "nature study") in many States.

Paul Recher is a grower and merchant of tropical and sub-tropical fruit tree seeds. The rationale for using chemicals, i.e. "better the chemicals you can use wisely than storebought food indiscriminately sprayed".

David King, a local permaculture teacher, pointed out that small gardens are usually a lot more productive than large. Use space efficiently by growing vertical climbers, and keep the garden close to the house as quick regular visits make a lot of difference.

5 CONFERENCE REPORTS

Michael Reid of Northern Rivers Organic Marketters spoke on organic standards. Current standards can be obtained for \$2 from the National Association for Sustainable Agriculture, Box A336, South Sydney 2000. Farm inspections and soil tests can also be arranged through this address.

Graham Eggins, from the Northern Rivers Herb Growers and Marketters Association based in Lismore, discussed the marketing of herbs and their potential in this country and overseas.

Des Buchorn, dietician/nutritionist, spoke on the nutritional value of new varieties versus old. We need 4 kg of fruit and veg. per day to obtain equivalent energy requirements as 1.65 kg of wild (uncultivated "bush tucker") fruit and vegetables! Des also spoke of the protein "hoax" in Western culture; we do not need nearly as much as experts are recommending.

Roy Harrison, lecturer on organic growing, inspired us on gardening organically-practically from his vast experience.

Peter Hardwick has been researching bush food for 10 years and has a degree in horticulture. He showed many interesting slides on edible native plants, including several which he believes have potential for development as cultivated crops. These include Warrigal greens or New Zealand spinach, Davidson's Plum or Ooray Plum, the native Black Apple, native Tamarind, Bopple Nut, Bunya Nut, all of which can be grown from seed, and several potential spice plants.

Cathy Robertson spoke from her extensive experience in raising free-range chooks commercially. Ian Bisset retired Atomic Energy Commission scientist, spoke up against food irradiation.

Ann Close from The Toxic Substances Committee spoke on monitoring of chemical usage in the environment. Sam of Nimbin's Organic Shop, Linda Woodrow of Kyogle Organic Growers and Dan Hamilton and Simon Lamont from Yum Yum, Lismore, all shared their extensive experience in marketing organic produce.

Jude and Michel Fanton from Seed Savers' spoke about genetic erosion of wild ancestors of cultivated plants, the origin of cultivated plants and hints on seed saving for specific plants.

IN CONCLUSION: It was gratifying to see people from so many walks of life at the forum and particularly pleasing to have seed savers from so far away as Victoria. While some of the topics may seem unrelated to seed saving, there seems to be a general feeling amongst seed savers that safe food is important, and that growing it is the surest way of obtaining it. Seed saving is a natural part of growing your own.

SECOND AUNNUAL SEED SAVERS GATHERING - LAST WEEKEND IN NOVEMBER

WOULD YOU LIKE TO SPEAK OR SUGGEST SOME TOPIC?

SEED SAVING NOTES⁶

Your vegetable plants and their seeds will change very slowly due to either environmental factors (drought, short seasons, disease, pH changes, etc.) or genetic factors (mutations, genetic shifts, etc.), and your skill in selection will determine if these changes are for the better. You must learn how to select the right plants to save seed from and then how to prepare and store your seeds correctly. Always look at your plants with seed selection in mind. Don't just look at the fruit; look at the whole plant. Select several plants to save seed from not just the best looking or largest one. This will give your seed a greater genetic diversity and is the key to continued evolution and the ability of your plants to adapt to a variety of conditions. Select plants that have characteristics you want your next year's plants to have. Characteristics such as size, flavour, earliness, ability to survive a short season, disease-resistance, drought resistance, insect-resistance, lateness to bolt, trueness to type, colour, shape, thickness of flesh, hardness and storability can all be chosen.

The varieties that the seed catalogues call "hybrids" are the result of crossbreeding two varieties. For seed saving purposes they should be avoided, because seed saved from them will either be sterile or will begin reverting to one of their parent varieties. All the other seeds in the catalogues are the old "standard varieties" which run true year after year. They will come true from seed and remain pure only if you keep them from crossing. Some plants are cross-pollinating and their pollen may be carried great distances on the wind or by insects. With such plants you must either grow only one variety, widely separate different varieties, or hand-pollinate for purity. Other plants are self-pollinating, in which case several varieties can be grown with only slight separation.

You will need a way to mark and keep track of different varieties in the garden. Always use wooden stakes that are tall enough that the plants don't cover them as they grow. We cut 8 cm squares out of plastic milk bottles and used a "permanent" marking pen to write on these squares (test by washing first to be sure that they are permanent). These squares were stapled to the lath with a staple gun that you can buy at any hardware store. We really like this system because you can write a lot of information right on the plastic tag, such as: variety name; accession number; the date that you planted it; the date it matures; and any other information you are gathering on that plant. And that tag can stay right with the seed when you harvest, process and dry it. That way you'll have that information at your fingertips to write on paper packets or on foil packets that you are heat-sealing for frozen storage. And these plastic tags can be stapled directly to bean poles or punched with a hole so that you can tie or wire it where you want.

You must take precautions when drying and storing your seed, so that its vigour will stay as high as possible. Vigour is your seed's ability to germinate rapidly with good disease-resistance, and it will be destroyed rapidly by high temperature and high moisture during storage. Seeds can be dried on a screen or on wax paper in the sun, by sealing them in an airtight container with silica gel (until they reach proper moisture levels for entry into storage).

Your seeds must be completely dry before you store them and they should break instead of bending (less than 8% moisture). This thoroughly dry seed must then be stored in a completely airtight container at as low and as constant a temperature as possible. Put each variety of small seed in an envelope and write the variety name and the year on each envelope. Put these envelopes into any glass jar that has a rubber gasketed lid that can be screwed down tightly enough to make the container airtight and moisture-proof. We use everything from baby food jars (they have a lot of rubber under the lid and work great for small samples of larger sized seeds such as beans) to two litre jars full of envelopes on which we have modified the lids with homemade gaskets cut from old inner tubes. Also excellent are any jars that have a rubber gasket under the lid instead of cardboard (the more rubber the better). Be sure to screw the lids on as tightly as possible to make them airtight. Questionable lids can be taped shut with black electrical tape.

When you take the container from the freezer, you should let it set out overnight to come to room temperature before you open it. If you don't do this, moisture will condense on the cold seeds and the effort you put into drying them will be wasted. Do not leave the container open for any length of time. Minimize your entries into the container because temperature fluctuations are not good for the seeds. Seeds stored by this method will retain their maximum vigour and will remain viable for up to five times the periods shown on viability charts.

NOTES ON PARTICULAR VEGETABLES ANNUALS

Beans - (*Phaseolus vulgaris*) - contains all of our common bush or pole beans, whether used for green snaps, green shell or dry. They are self-pollinating before the flower opens, so there is seldom any crossing. Occasionally you may notice some variation or oddities in the seed. This is more likely due to a genetically unstable variety or a difference in conditions (change of soil pH or wetness at harvest) than to any true crosses, but crossing caused by insects does sometimes occur. The seed in a crossed pod will not change in colour that first year, but will show a tremendous variation when replanted. Such crosses are often highly unstable and you may have to select them for 5-10 years before they completely stabilize. (Don't offer such seeds through the SSN until they have been completely stable for three years). Never plant two white-seeded varieties side by side, because you won't be able to tell if they cross. And seed coat colour isn't always a reliable indicator for crossing in cases where one colour is dominant over another. Don't plant two pole bean varieties next to each other in a row or they are liable to twine together and mix up your seed. Beans should be isolated by 3-4 metres.

SEED SAVING NOTES

When harvesting beans, mark several of your finest plants (wooden stakes, strips of cloth, or plastic ribbons) and let the pods completely dry out on the plant, weather permitting. When most of the leaves have fallen off, pull the plants and hang them under cover to finish drying. Small amounts of seed can be shelled out by hand. For large quantities, make sure that the beans are thoroughly dry, crush or thresh the pods, separate the beans from the chaff by winnowing in the wind, label and store. Weevil eggs, which are almost always present under the bean's seedcoat and can ruin your seed in a matter of months, can be killed by placing the thoroughly dry beans in a tightly sealed jar and freezing them for two days.

Runner Beans - (*Phaseolus coccineus*) - You can always tell which beans belong to this species because, when they are coming up, they develop with their two seed halves UNDER the ground. Many people mistakenly think that these are "fat limas", but their growth habit when emerging from the soil will always give them away. Examples would be Scarlet Runner, all of the Aztec Beans, Butterfly Runner, Painted Lady, etc. Some people grow them just for their beauty as ornamentals. They have brightly coloured flowers that are very "open" in nature. Although the flowers are self-pollinating, bees and bumblebees work them heavily and thus cross them.

Peas - (*Pisum sativum*) - are normally self-pollinating, but may occasionally cross-pollinate. If you are growing more than one variety, separate them by 10 to 18 metres plus a tall barrier crop in between. Crossing in peas is harder to notice (and even more difficult to rogue out) than some other crops because of the similarity of the characteristics between varieties. Therefore, even though they cross slightly less than beans, you may wish to take more precautions with them.

Lettuce - (*Lactuca sativa*) - is self-pollinating, but some crossing can and does occur when planted closely. Lettuce will cross easily with Wild Lettuce or Prickly Lettuce (*Lactuca canadensis* or, as some scientific works list it, *Lactuca serriola*). When lettuce crosses with its wild relation, you will easily be able to see it when you grow plants from that seed the following year. The offspring from such a cross will have intermediate characteristics between the two and be horribly bitter. Cut down all wild lettuce within 65 metres of any lettuce plants you plan to save for seed. We recommend separating varieties by at least 3 metres. When deciding on what to save for seed, choose the plants most typical for the variety and the slowest to bolt. If you continue to save seed from the fast bolters, over the years the quality of the variety will deteriorate considerably. When the seed is fully developed, cut the seed heads off, put them in a paper sack and store in a dry place until they finish drying, separate the seeds, label and store. A word of caution: if you try to wait for the entire plant to dry at once, on most varieties you will lose more seed to the wind than you will gain by waiting. The best way to get the most seed is to take several trips to harvest it.

Chinese Cabbage - is a cross-pollinating annual. There are three distinct groups of Chinese Cabbages:

Non-Heading Chinese Cabbage - *Brassica rapa* (Chinensis Group) which includes Pak Choi, Celery Mustard, Chinese Mustard, etc.;

Heading Chinese Cabbage - *Brassica rapa* (Pekinensis group) which includes Pe Tsai, Chinese Cabbage, Celery Cabbage, etc.; and Mustard Spinach - *Brassica rapa* (Perviridis Group) which includes Tendergreen, Spinach Mustard, Oriental Mustard, etc.

None of these Chinese Cabbages will cross with regular cabbage or any other member of the Cabbage family (cabbage, broccoli, Brussels sprouts, cauliflower, collards, kale or kohlrabi), since they are all *Brassica oleracea*. But any Chinese Cabbage will easily cross with any other Chinese Cabbage, no matter which group it's in. Chinese cabbages send up a seed stalk from the centre of the head and the pods will turn brown when mature. Most all of the seeds will mature at the same time so the stalks can all be cut and placed in bags to finish drying. The recommended isolation distance is 1/2 km. It is important to be very selective about the quality of the plants you save seed from. You will be far better off saving seed from the best six plants rather than 25-30 at random. Never save seed from ones which rapidly bolt to seed. Also, self-sterility can exist in this group, so always save seed from at least three plants.

Mustard - (*Brassica juncea*) - is our Western Mustard, as opposed to the Oriental Mustard Spinaches described above which are actually Chinese Cabbages. It is cross-pollinating and will easily cross with other mustards. Seed development, isolation and method are all the same as above.

Spinach - (*Spinacia oleracea*) - is cross-pollinating and its pollen is very fine and can be carried long distances by the wind. The pollen can easily drift a mile or more. The wind is the primary pollinator so, unless you can isolate different varieties in wind-protected areas, only plant one variety. Spinach plants are either male or female, so some will only produce pollen and the others only seed. You should save only your best plants, but try to leave a close to equal number of both sexes to ensure good seed set, as some male plants will produce their pollen before the female plants produce flowers.

Radishes - are insect-pollinated, so grow only one variety. Choose several of the largest and earliest roots to save seed from. Don't save seed from the early bolter. Some support may be needed when the plant reaches the flowering stage, because the seed stalk can grow a metre and a half tall and have many side branches. The seed pods turn brown at maturity. Pull the plants and finish drying under cover.

Broccoli - is unlike the other members of the Cabbage family in that it will produce seed the first year. It will readily cross with the other members of the Cabbage family if any are flowering within half a kilometre. Do not cut the flower head for food if you are going to save seed from it. Treat the seed as you would Chinese Cabbage.

Sunflowers - (*Helianthus annuus*) - will cross readily with wild sunflowers. Varieties will also cross among themselves, so separate by at least 350 metres. Sunflowers are a good example of what some persons refer to as home-saved seed "running out". Seed doesn't actually "run out" but, unless you take proper precautions, a gradual process of undesirable crossing over several generations can make some seed practically worthless.

Okra - (*Abelmoschus esculentus*) - Okra is self-pollinating and insect cross-pollinated if different varieties are grown within two kilometres. Select and mark quality plants, with distinctive variety

SEED SAVING NOTES

characteristics, for seed saving. Leaving pods on the plant to mature for seed will cause reduced pod production and plant aging will accelerate. Many okra variety blossoms open 41 to 48 days after planting.

Capsicum - (*Capsicum annuum*) - are self-pollinating, but insects can and do cause considerable crossing. In a study at New Mexico State University (USA), the rates of outcrossing were anywhere from 15 to 80% instead of the 0-5% or 5-15% that all of the standard references now give. As more information becomes available, we are repeatedly confronted with the fact that even the self-pollinated crops are capable of high degrees of outcrossing under certain conditions. For complete purity, it is necessary to separate varieties by 1/4 km or to use some sort of caging technique. Seed Savers' Exchange (USA) recommends using a spun (not woven) polyester which will let rain and light through.

Eggplant - (*Solanum melongena*) - pollination is like capsicums, so at the very least you should separate varieties by the length of your garden or with a tall crop. Leave the best fruit on several plants for as long as possible, scrape out the seeds, separate from the pulp, dry and store. Eggplant seeds do not remain viable for long periods of time, so must be regrown every year if possible.

Pumpkins & Squash - (*Cucurbita* species) - are insect-pollinated. In order to get pure seed for your next year's planting of a particular variety, you must keep the bees from doing their job. This is easily done, but you must become a keen enough observer to tell when its flowers are about to open. Your plant will start setting male flowers well before it produces any female flowers. This is so there will be ample pollen available when it does start setting female flowers. Female flowers can be easily recognized by the small baby squash right below them. Male flowers have no such fruit - they are simply flowers on straight stems.

Once you start studying the flowers closely, you will also be able to tell if they are "green" or are about to open or have already opened. Flowers that have already opened will be wilted, so it is too late for you to use them for your pollinations. How do you tell which flowers are about to open for the first time? They show a yellow flush of colour, especially along the seams. And sometimes you will even see the sections of the flower starting to break open at the tip. When you see those signs, those flowers will open overnight unless they are sealed shut. If you intend to hand-pollinate squash, you will be making a morning inspection and an evening inspection of your plants for quite some time.

In the late afternoon or evening, find both a male and a female flower on the same plant that are unopened, firm and yellow. We use 2 cm masking tape to seal the tops of these flowers and keep them from opening (warning: some of the inexpensive tapes are not sticky enough and will pop open when wet with the morning dew). Tear off an eight cm chunk of tape, wrap it around the end of the flower so that just a little bit of the tip sticks out past this band of tape, and pinch the sticky ends of the tape shut against themselves.

Wait until the dew dries the next morning, because you will be taping the female flower back shut after you make your pollination and the tape doesn't stick very well when it's wet. Find the male and female

11 SEED SAVING NOTES

flowers you taped shut the previous evening. Pick the male flower and leave a good chunk of stem on it to use as a handle. Tear the petals off of the male flower and then hold its stem between your teeth so that you'll have both hands free. Now tear the tip off of the female flower in a straight line just at the bottom edge of the circle of tape. Then, as if in slow motion, the female flower will open wide.

Now take the petal-less male flower and hold its stem like a handle. Swab the pollen-covered anthers of the male flower on the stigma of the female flower. Try to rub pollen on each of the stigma's different sections; you may wish to use two or three male flowers on each female flower to get a better saturation of pollen.

Now tape the female flower shut again and the pollination is complete. Sometimes an especially brittle flower will split along one of the large seams that run up and down. If that happens, just keep taping closer and closer to the fruit until the hole is covered. You can actually cover the entire blossom with tape and the technique will still work. But be careful to not do any damage to the base of the flower where it attaches to the fruit or it will abort. The only thing left to do is to mark that fruit in some way so that you will know at harvest time which fruits contain pure seed. We tie a piece of red plastic ribbon in a loose knot around the fruit's stem, so it won't constrict its growth.

The same technique is used on watermelons, muskmelons and cucumbers, except that their flowers are much smaller and are not so easy to manipulate. Self-pollinating a naturally cross-pollinated crop can lead to what plant breeders call "inbreeding depression" but, fortunately, cucurbitae don't show any signs of this.

There is a 20 day after-ripening period when the seeds actually improve in the fruit after you pick it, so allow this period to pass before taking seed from the fruit.

All pumpkins and squash belong to one of the four species of the genus *Cucurbita*. For seed saving purposes, you must therefore plant only one variety from each of the four following species:

Cucurbita pepo - Characteristics: leaves and stems are prickly, especially when mature; fruit's stem is hard and has five sharply angular sides; and seeds are white with white margins. This species includes all summer squash, all of the true pumpkins and varieties that are both bush and long-vining. The following varieties all belong to the species "pepo":

All of the Acorns, the small Crookneck squash, the Scallop squash, Vegetable Spaghetti, Triple Treat, Marrows, some warted gourds and all of the Zucchini's.

Cucurbita maxima - Characteristics: very long vines; huge leaves; leaves and stems are hairy; fruit's stem is round, soft and corky; thick brownish seeds with cream coloured margins and thin cellophane coatings. The following varieties all belong to the species "maxima": Queensland Blue, Baby Blue, Black Prince, Gold Nugget, Hokkaido Green, Jarrahdale, Triamble and some of the warted pumpkins.

Cucurbita moschata - Characteristics: large leaves; spreading vines; leaves and stems are hairy; fruit's stem is hard and slightly angular; fruit's stem flairs out where it attaches to fruit; sepals (little green spikes at base of flower) are arrowhead or spade-shaped

in all but a very few cases; moschata leaves are slightly darker green than mixta with pointed leaf tip and slight indentations; small oblong seeds with dark-beige margin. The following varieties all belong to the species "moschata": All the Butternuts, Grammas, Tahitian Melon Squash.

Cucurbita mixta - Characteristics: large leaves; spreading vines; leaves and stems are hairy; fruit's stem is hard and slightly angular; fruit's stem flares only slightly where attaches to fruit; sepals are generally straight even at tips; mixta leaves are slightly lighter green than moschata with rounded leaf tip and hardly any indentations; white seeds with pale margins, cracks on flat sides and cellophane coating. We at Seed Savers' Network have not yet identified any Australian pumpkins or squash as "mixta".

Different varieties within the same species (one of the four groups above) will cross very easily, but there is no need to worry about any crossing between species. Crosses between two varieties that belong to different species are so difficult to make and their progeny so highly sterile, it is unnecessary to worry about such crosses by natural means. Of greater concern may be contamination from pollen from a neighbour's garden.

The above varietal lists are by no means complete. Further information from members will be much appreciated, since proper identification of varieties will allow the keeping of four varieties (one from each species) within one garden, providing the garden is isolated by at least half a kilometre from any other gardens growing cucurbits.

Always remember that when a cross occurs you cannot see a change in that summer's fruit, but you'll certainly see it when you grow out that fruit's seed the next year. The cross is in the seeds. When you grow them the following year, you'll see the mess that has been created. Every seed will produce a plant with a different size or shape of fruit. All of the fruits on a particular plant will be alike, but even if those fruits are hand-pollinated, their seeds will still be highly unstable when planted the year after.

Melons - All of the different groups of melons (listed and described below) have the same genus and species - *Cucumis melo* - so any of them will cross with each other. You must either grow only one variety of melon or hand-pollinate different varieties or separate different varieties by half a kilometre. Hand-pollinating will allow you to grow more varieties, but muskmelons are by far the most difficult vine crop to work with. Partly this is due to the small size of the flowers. But the main problem is that muskmelons just naturally abort probably 60-70% of the female flowers that bloom. You have no way of knowing which flowers the plant is going to abort, so, no matter how good your hand-pollinating technique is, you are going to have a lot of failures. You can improve your chances slightly by getting to the very first female flowers to bloom, because those are more likely to set fruit. Each time the plant sets a fruit, more of its flowers are going to abort from then on. So be sure to pinch off all fruits that weren't hand-pollinated, which will keep the plant blooming and again improve your chances.

When harvesting for seed, let the melon get overripe. Scoop out the seed and wash it in a sieve under running water. Rub the seeds and pulp with the backs of your fingers and try to force as much of the pulp as possible through the sieve, because it makes a good home for

fungus and bacteria and diseases. After draining the water off, place the seeds on paper plates or even a piece of glass to dry. Then put the seeds into envelopes, label and store.

Melon varieties: Muskmelons - *Cucumis melo* (Reticulatus Group) - are "netted" and the stems "slip" from the fruits when ripe. European Cantaloupes - *Cucumis melo* (Cantalupensis Group) - are the only "true" cantaloupes. They have no netting and the fruits never slip from the vines, which makes them perfect for trellis culture. Honeydew and Casaba melons make up another group - *Cucumis melo* (Inodorus Group). There are several other minor groups of melons which include: Oriental Pickling melons - *Cucumis melo* (Conomon Group); Vine Peach - *Cucumis melo* (Chito Group); Vine Pomegranate - *Cucumis melo* (Dudain Group); and the Serpent Cucumbers - *Cucumis melo* (Flexuosus Group), also called Armenian Cucumbers or Snake Cucumbers, which are melons despite their names.

Watermelon - (*Citrullus lanatus*) - is also an insect-pollinated crop. Watermelons will cross with any other varieties of watermelon and with citron. Unless you hand-pollinate your watermelons, only one variety can be grown within half a kilometre of any other variety.

Watermelons are relatively easy to hand-pollinate, even though the flowers are rather small. You can usually expect, when conditions are favourable and the plants are not under stress, to achieve between 50 and 75% success with your hand-pollinations. The very first female flowers that the plant produces are usually the ones that set. If you don't get those first ones, your success rate will go down each day. It's important with watermelons to use two or even three male flowers when making pollinations, because there isn't very much pollen on the male. You can tell when a male flower is ready because the anthers, the tiny circular ridged pollen-bearing structures in the center of the male flower, will look like a fuzzy little yellow ball once the pollen shows. A little trick is that if you find a female flower ready to open the next morning, 95% of the time the second flower back from that one will be a male flower ready to open the next morning also. That seems to work almost all the time and it keeps you on the same vine.

When working with tiny flowers, it's sometimes hard to tell if they are going to open the next day. Go ahead and tape any flowers that you are not sure about. As with squash, when you take the tape off the next morning, if they are ready, they'll pop open. But if the flower is still sort of greenish and the petals are closed in tight and not even starting to split, then you know it's not going to open that day. Take the tape off, remember where that flower is, and come back and tape it again the next evening. Don't try to leave the tape on for two days or the flower won't develop and will just dry up under the tape. Watermelons seem to have a lot of female flowers that contain both male and female parts, but those male parts are usually sterile. So don't ever think that you can just tape such a flower shut and it will pollinate itself, because it won't.

SEED SAVING NOTES

Remember to pick off any fruits that formed which were not hand-pollinated. This will cause the plant to produce more female flowers instead of pouring its energy into feeding the fruits that you didn't want. If it is getting late in the season and you're not sure if a fruit is going to mature, don't hesitate to pinch off all the tips of the vines on that plant. That will force the plant's energy into the fruits as opposed to producing more vines.

It is difficult to tell when a watermelon is ripe. Here is a method which seems to work almost every time: look for the small tendril where the fruit's stem attaches to the vine. Watch for that tendril to turn really dry as your first sign that the watermelon is about ready. As an additional sign, watch for the light patch, where the underside of the melon touches the ground, to change colour. The colour of that patch will change to the next shade darker: white to cream; cream to yellow; or yellow to almost orange on the super dark-skinned types. Let watermelons from which you intend to save seed become a little overripe. Remove the seeds, wash in cool water and then dry as you would muskmelon.

Cucumbers - (*Cucumis sativus*) - are insect-pollinated, so they will cross with other varieties of cucumbers and with West Indies Gherkin (*Cucumis anguria*). Unless you hand-pollinate your cucumbers, you must grow only one variety or separate any two varieties by a half a kilometre.

Cucumbers are easy to hand-pollinate, but not every pollination will be successful because the plant produces far more female flowers than it can possibly handle. Also don't be surprised if you hand-pollinate a fruit and get it to set, but when you cut open the fruit at harvest time it won't have any seed in it. This has to do with the number of insect pollinators and the fact that cucumbers tend to be parthenocarpic (capable of developing a fruit without fertilization). One study done with cucumbers showed that if there were sufficient bees in the area, the average female flower was visited 52 times by bees while it was receptive. None of us are going to be that persistent, but the more male flowers used, the better the chances of success.

When saving seed from cucumbers, let the fruits ripen past the edible stage. Depending on the variety, it will either turn orange or deep-yellow or white. The best stage for harvesting seed is when the cucumber starts to get a bit soft. Pick the fruit, cut it open and scoop out the seeds which are each surrounded with a slimy little gelatinous sack. Put these seeds in a glass jar or a plastic container. Let them ferment for about three days.

Stir every day and keep the temperature between 25-35 C, if you have any control over it. When this mixture starts to separate the bad seed and pulp will float to the top and can be poured off. The good seeds will sink to the bottom of the container. Wash them in a sieve, drain off excess moisture, spread on a paper plate and dry.

Gourds - (*Lagenaria siceraria*) - are the hard-shelled gourds with evening-blooming white flowers. They will not cross with any of the other vine crops we have discussed. In its immature stages it is used just like zucchini and many people like it better. All of the hard-shelled gourds used for gourdcraft belong to this group and will easily cross (but remember that the small striped and warted gourds are *Cucurbita pepo*).

As the flowers of these gourds open in the evening, the morning and evening sessions used for the other vine crops must be reversed. During the morning, find the male and female flowers that are about to open and tape them shut. Go back in the evening, when the flowers would normally be opening and make your pollinations. The flowers will open up quite easily and they have an awful odour that you can't miss. Before frost, bring the mature fruits into the house and let them dry down slowly. By mid-winter all that will remain of the gourds will be a thin hard shell and the seeds will rattle around inside when shaken. That's the perfect container for the seeds until you are ready to break it open and plant them.

Potatoes - (*Solanum tuberosum*) - won't cross at all since tuber divisions are really just clones. Crossing between potato flowers affects the seed balls, not the roots. Select several of your best looking plants which are surrounded by other healthy plants to save for seed. Never keep potatoes for seed that show any sign of scab or virus. You may be able to increase your production by planting small (hen egg size) whole potatoes, since they are less apt to be badly sprouted and often will produce a vigorous plant more quickly than cut potatoes. If you are planting small whole sprouted potatoes in the spring, don't damage the big sprout on the eye end of the potato since this will produce your most vigorous plant. Most of the other sprouts you can just break off. Some people think that yields can be improved by planting sprouted potatoes. Dig your potatoes when the vines begin to dry up, because when the soil loses its shade it becomes hot, which may damage your crop. How well your potatoes keep does not seem to be affected by either washing or not washing. After drying in the shade for only a few hours to toughen their skins, they are ready to store. As for storage temperature, the colder the better - 1 to 4.5 degrees C. Burying them in dry sand is said to be the perfect way to store them.

Tomatoes - (*Lycopersicon lycopersicum*) - are said to be over 98% self-pollinating. But you should realize that even such a slight amount of insect pollination, over a number of seasons, may be enough to destroy the characteristics which made that variety unique. Studies have shown that if you separate varieties by just 2 metres, their crossing goes right down to nothing. So don't grow tomato varieties side by side if you intend to save seed from them. The exception to this are the "potato leaved" varieties (or wild species such as *L. pimpinellifolium*) which cross very easily because of the flower structure and should be separated as widely as possible. You should realise that it is a mistake to save seed from just your largest fruit. To maintain as much genetic diversity as possible within your seed samples, make sure to save seed from as many plants as possible.

SEED SAVING NOTES

16

Squeeze pulp from several ripe fruit and allow to ferment in a container, add a little water if it is too dry. Leave for a few days, when a white foam appears, rinse and sieve the good seed out. Your seeds will be disease free. Dry on a newspaper for a few days, finish drying in an envelope hanging in a shady spot. Store and label.

Corns - are wind-pollinated, so any corn (sweet corns, popcorns, ornamentals, dents, flints, flour corns or podcorns) will cross very easily with any other corn. Corn pollen is extremely light and blows for great distances on the wind. In order to keep a variety of corn pure, you have to either hand-pollinate it or grow it at least one-eighth kilometre from any other corn (some people believe that the isolation distance for corn should be two kms). Corn is very "plastic", so with careful observation and selection you can gradually determine the characteristics that your future crops will have. Always try to grow 200 plants of each variety (100 plants at the very least) in order to maintain as much genetic variability and as much diversity as possible within the population. Out of those 200, you will be working with about 100 of the best plants that are the most true to type. Never use any off-type plants within the block, unless you are working with an ornamental corn and are focussing on oddities. You should strive to bag the tassels of 50 plants and the ears of 50 other plants (25 of each as an absolute minimum). You can usually avoid inbreeding depression by never working with both the tassels and the ears on the same plants and by always making a mixture of seed from 25-50 ears taken from different plants. Any sample of corn that can be traced to a single ear has been through such a severe bottleneck that most corn breeders would refuse to waste their time working it.

To insure the best pollination, corns should always be grown in blocks rather than in long single rows. If you choose to grow just one corn in isolation, grow 200 plants and break the tassels out of any off-type plants. Let the ears ripen on the stalk until the husks are dry. Then pick the ears, pull the husks back, tie several ears together by the husks, hang in a dry well-ventilated place until thoroughly dry, shell, save only completely formed kernels and store in an airtight container in a dry cool place.

Note: an early & a late variety can be planted side by side, if the early variety stops pollinating before the silks of late variety emerge.

Hand-pollination of corn is an arduous and time-consuming process, but it is the only alternative for persons wanting to grow several varieties of corn. The tassel at the top of a stalk of corn is the plant's male flower. When the tassel ripens, tiny structures called anthers emerge along the branches of the tassel and start to shed pollen. The plant produces one or more ears along its stalk. These ears are the female parts of the plant and silks emerge from the ears. The wind blows grains of pollen onto the strands of silk. Each strand that is pollinated results in a kernel of corn developing on that ear. Collect pollen in brown paper bags which you have left attached over the tassels. Mix the pollen of as many males as possible. Carefully tip pollen over the emerging silks of the ears which you have also covered previously with bags. Leave covered until the silks are brown.

BIENNIALS

Carrots - (*Daucus carota* var. *sativus*) - are cross-pollinating and will cross with wild carrot (Queen Anne's Lace - the root smells like a very strong carrot). To save seed and ensure purity maintain 1/2 km separation between each variety. A careful selection process is necessary when saving carrot seed. In the autumn of the first season select 12 or more roots which are uniform and true to the variety in both shape and colour. In mild winter areas (where the ground doesn't freeze) the roots can be replanted at that time. Where the ground freezes, the roots will need to be stored in a cellar over winter. When spring arrives, plant the roots in a block fashion, a root every 30 cm. The plants will grow to as much as 1.5 metres and become quite bushy. Six roots will supply a large amount of seed, but plant extra to ensure good pollination.

Beets - (*Beta vulgaris*, *Crassa* Group) - are cross-pollinated. Different varieties must be 1/2 km apart; beets will also cross with Silver Beet. Beets are not very winter hardy so they should be stored in a cool place over winter. Never save seed from a beet which bolts the first year, as this is a serious defect. Save your best 6 to 12 roots and replant them in the spring about 30 cm apart block fashion as you would do with carrots. Beets are sometimes self-incompatible so plant at least six roots. Self-incompatibility is when one plant needs pollen from another plant to pollinate it even though it produces pollen itself. The yield of beet seed is heavy, around a 3 litre jar per plant. The plants will grow 1-1.5 metres tall with many side branches.

Parsnips - (*Pastinaca sativa*) - some controversy exists as to whether this crop is cross-pollinated or self-pollinated. It is best to assume it is cross-pollinated and separate varieties by 1/2 km. Parsnips can be left in the ground all winter as they are very hardy. A careful selection process as to uniformity is essential to maintaining a variety.

Salsify - (*Tragopogon porrifolius*) - Use the same procedure as with parsnips.

Turnips - (*Brassica rapa*, *Rapifera* Group) & Swedes/Rutabagas/Kohlrabis (*Brassica napus*, *Napobrassica* Group) - are both cross-pollinating biennials. Follow the same instructions as for beets. Some crossing can occur between turnips and swedes and also turnips will cross with other turnip varieties and rape. Some crossing can occur but isn't likely with radish, mustard and Chinese cabbage. To prevent crosses between the last three vegetables and turnips, separate by the length of your garden.

Celery - (*Apium graveolens* var. *dulce*) - & Celeriac - (*Apium graveolens* var. *rapaceum*) - Both will cross with one another and each will cross with other varieties of itself. Again you should save 6 to 12 plants over winter and then select the best 4 to 6 the next spring. The plants will grow quite large, to 1.5 m in some cases, and each healthy plant will produce an abundance of seed. All the of the seed will not ripen at once.

SEED SAVING NOTES

Onions - (*Allium cepa*, Cepa Group) - & Leeks - (*Allium ampeloprasum*, Porrum Group) - are usually very hardy. Onions are cross-pollinating, and, though this has not been confirmed, they probably cross with leeks as well. This means you can only grow either one onion variety or one leek variety, not one of each. To get a good supply of seed you will probably want to plant between 12 and 15 plants, as the seed production is not as high as with beets or carrots. The seed will be produced in a ball-like structure at the top of the plant. It needs to be harvested when the ripe black seed becomes visible or your crop will shatter onto the ground. Under no condition save seed from plants which bolt to seed the first season. Such seed will be genetically inferior.

Cabbage Family - (*Brassica oleracea*) - (cabbage, broccoli, Brussels sprouts, kale, collards, cauliflower and kohlrabi) - All of these will cross with each other, so you must choose one variety from the entire group. For example, you cannot save seed from one Brussels sprout and one cabbage, because the two will cross. Be selective about what you save seed from. In most cases support will have to be given to the plants during flowering, as they will grow quite large. A good health cabbage plant will yield as much as 250 gm of seed. Remember to save at least three plants for seed, as many members of this group are self-incompatible. If you only have one plant you will not get any seed.

Parsley - (*Petroselinum crispum*) - Let the plant overwinter in the garden. It will produce an abundance of seed the second year. Different varieties will cross, so grow only one.

Endive - (*Chicorium endiva*) - is really a biennial, but if you have a long season and can plant it very early, it will seed the first year. Save it. This seed will not be genetically inferior. If winter temperatures do not fall below -18 degrees C, the plants will overwinter and seed the next year. The plants are self-pollinating. Follow the same procedures as with lettuce.

Chicory - (*Chicorium intybus*) - both leaf and root types exist and both are biennials. When saving seed, the plants of root chicory can grow 2 m tall, so some support may be needed. It is cross-pollinating, so grow only one variety.

Silver Beet - (*Beta vulgaris*, Cicla Group) - should be treated the same way as beets. It will cross with beets, so grow only one variety either Beet or Silver Beet, not one of each.

Much of these notes are formulated for the collector. Most of us are just concerned with the seed saving of our favorites, and that's what being regional is all about! Many thanks to the director of the Seed Saver's Exchange of the U.S.A. for allowing us to adapt and reprint from his 1988 yearbook. Their seed exchange has been an inspiration and model to many other groups in the world. Thankyou Kent Whealy!

SEED FLOW

The Spring Newsletter '88 had in it a blue form which asked for particulars about gardening conditions and experience from members willing to multiply and caretake rare strains. Many of the seeds sent to us last year were in small quantities and sometimes of unknown harvest date (most were 1987-88 harvest). This year, seeds should be even fresher, as more seeds are returned. But if you managed to only save small quantities or failed with the seeds we sent you, do not worry. We send rare seeds to as many good gardeners as possible, and others may have been more lucky. With better knowledge, fresher seeds, larger samples, you will be able to be more prolific and offer in the newsletter or send some back.

GUIDELINES FOR OFFERING IN THE SPRING NEWSLETTER

Until more local seed saving groups form, we would like to encourage as many gardeners as possible to offer in the spring newsletter. Here are some considerations:-

1. You do not need to have rare varieties.

Even if you have saved seeds from a plant that you consider common, e.g. a local rice marrow, other members will be pleased to obtain their seed from a non-commercial source. However you should have been saving seeds that you bought commercially for a number of years before you offer them. This is to ensure that they have had a chance to adapt to your local conditions.

2. You do not need to have great quantities of seed.

It is okay to start off small. If you do not have much, or do not expect to have much, you can stipulate Limited Quantity. This means your seeds are only available to people who are making an offer in the spring newsletter. A couple of dozen fresh seeds is all that is necessary in a seed packet, except for corn and sunflowers which need at least 100 seeds to maintain the variety.

3. You do not need to be filling seed requests all year.

You may choose to offer seeds for a restricted length of time e.g. September to December.

4. You should not have any extra cost.

Someone who requests seeds from you must send a self-addressed stamped envelope and * two 39c stamps for small seeds * three 39c stamps for large seeds or * five 39c stamps for tubers, cuttings, etc.
OR work on an exchange basis.

For a rare tuber or plant, make up your own price.

5. If you have a specific plant in mind and would like to obtain it, you can request it through our spring newsletter.

OFFERS

for those wishing to offer plants in the Spring Newsletter
PLEASE SEND IN BY JUNE 30TH

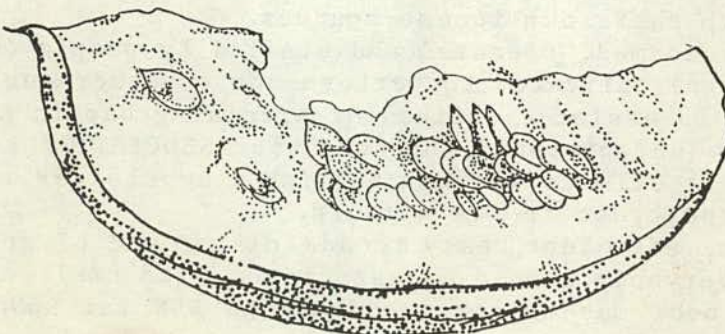
YOUR NAME:

ADDRESS:

SEED, CUTTING, TUBER OFFERED

1. Common Name:
 2. Origin: who had it before you? For how long? etc.
 3. Description: what is good about the plant? Any particular cultivation notes e.g. you are in an area with a short growing season.
 4. Limited Quantity: yes no
(i.e. available only to other people offering in the newsletter)
 5. Available for a restricted length of time: which months?
- Those offering more than one need complete the following sections only once:
6. Nearest large town:
 7. Rainfall:

DEADLINE JUNE 30TH



GO LOCAL

Local seed exchanges along with bio-regional gardens can actively preserve the ancestors and all the different cultivated plants. For a seed exchange, all that is needed is to find out what are the local resources (fruit, veg and other useful plants and even domesticated rare breeds of animals), have monthly meetings at markets or other regular events and distribute the list of local seed savers (names, addresses and the name of each local variety kept). Photocopying is the cheap way out. Local CWA, garden groups, organic growers, and church groups should be approached for the names of gardeners who have kept their seeds. Local paper and radio are usually keen to give coverage. They are sympathetic as we are no threat to anyone ... or are we?

As for bio regional gardens, we have established The Seeds Savers Trust which is to hold assets for the purpose of preserving cultivated plants. In addition to private gardens, we would like to see preservation, bioregional, heritage (or whatever name) gardens established in many regions for growing local varieties, storing them, teaching seed saving techniques and principles, on land held in trust by the Seeds Savers Trust.

We are looking for private grants from foundations and individuals to carry on our programme. We have been working long hours for no pay with poor office equipment. The office is shared with other groups. We do not know yet where the money needed will be coming from (as we are not applying for government funding) but we trust that the project is looked at as a service to all Australians, and others, and will attract funding from those who recognize its importance.

On Trusts

(quoted from Permaculture: A Designers' Manual, by Bill Mollison)
It is quite possible, even sensible, to completely replace the bureaucracy of public services with a series of locally administered trusts, and Holland (in particular) largely supplants expensive paid public services (burdened as they are with heavy salary and capital costs, and liable to inaction, self-interest, and executive inefficiency) with publicly formed trusts. In the case of any small country, such trusts can run all public operations, and the "government" becomes simply a way of conveying tax capital back to the regions via local trusts. However, trusts can also self-fund via non-profit businesses to become foundations, fully equipped with their own income sources.

Trusts are usually formed, operated and staffed by people (often initially volunteers) motivated to perform one or other public duty, or who seek to assist a defined or special group in need. Any trust can have (unregistered, no cost) an ASSOCIATION of volunteers, aides or clients who can publish a newsletter and generally assist the trust in its affairs.

Trusts are durable, efficient, easy to administer and of great public service; everybody should be associated with one!

(copies of Bill's book may be obtained through SSN for \$69.00)

SEED FILM - "PLANT LIFE"

There was a period of heavy decision making for the production team at the end of last year. Would we go ahead and shoot the film on video with a low budget of \$3,000, or go for quality with 16mm? In the light of the critical faculties of upper primary school children today, we chose the second way. So it was all stops out to raise extra funds. At present we have a submission before the Australian Children's Television Foundation.

David Bracks, actor in "Crocodile Dundee", "Mad Max", and many other films, supervised the writing of the scenario and will direct the film; Sally Fitzpatrick assistant sound editor of "Young Einstein" is producing it; Nicolette Boaz and Rik Cole have put in many hours as production assistants. Between them this group has gathered together a team of talent based in Sydney.

Nicolette, Jude, Michel, Sally and David have worked with students of Nimbin Central School on the scripting; and we've formulated funding strategies. It is now up to the Foundation to come forward. Shooting is planned for when Jude and Michel return later this year.

These people have generously donated money towards the project: Frank Scarfe (\$1 000), Lionel Fifield (\$300), A.K. & S.J. Finch, Jacqui Fithall, Matt & Marlise Staehelin and M. Martin (all \$100), and Jo Vallentine (\$50).

MEMBERSHIP

FOUNDATION MEMBERS: Bill Mollison, Sally Smith, Neil Walker, Carmelo Casella, Jenni Edgerly and friends, A.J. Whyte and Frances Durdin have donated \$300 for the long term goals of this project.

ASSOCIATE MEMBERS: Julian Bamping, Andrew Jeeves, Homeland Foundation, Michael Self, Jacqui Fithall, Frederico, Edna Kiss, Fay Roth, Dr. M. Harris, Louise Cavanough, Jim Campbell, and Zimbabwe Institute of Permaculture have given \$100 towards the better running of the network.

THEIR GENEROSITY AND FORESIGHT IS APPRECIATED

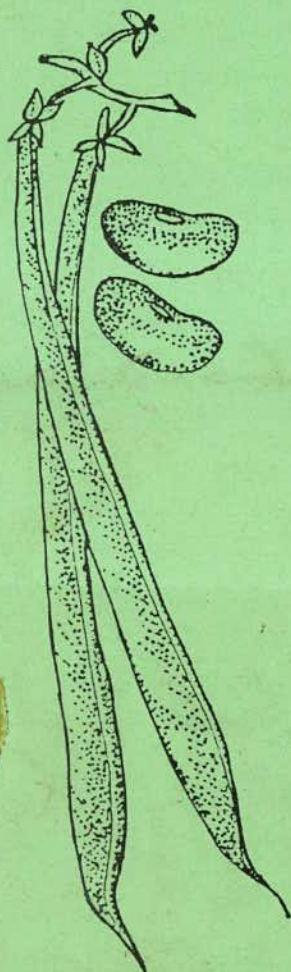
RENEWALS

The address label has either a date or a word next to your name. This to indicate when your subscription is due:

- e.g. '12/88' means you were due to pay last December
- '7/89' means you will be due to pay in July this year
- 'comp /89' we are sending you complimentary copies this year
- 'Life' means you are a foundation member

The pamphlet that we have enclosed will remind you of the subscription choices. Please note that we have made a reduction to five dollars for people who offer in the Spring Newsletter. Naturally this is to encourage you to make the seed offer! Form for making out your offer - page 20 DEADLINE JUNE 30th

"Preserving the Genetic Basis for Tomorrow's Food"



Printed by Ian Horsfield, Rosebank, NSW, 2480.

Gloria Constine
Nimbin News
Nimbin P.O.
2480



The Seed Savers' Network

PO Box 105 NIMBIN NSW 2480