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Diversity



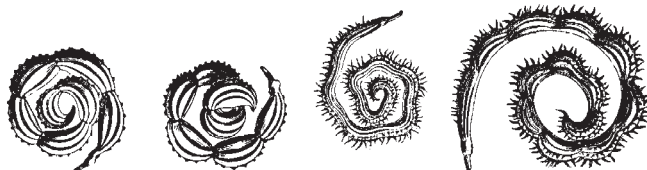
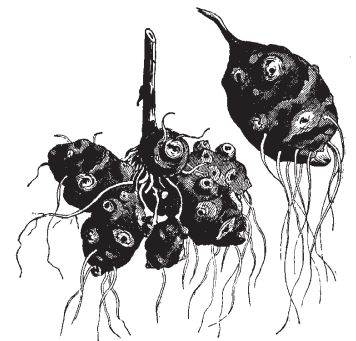
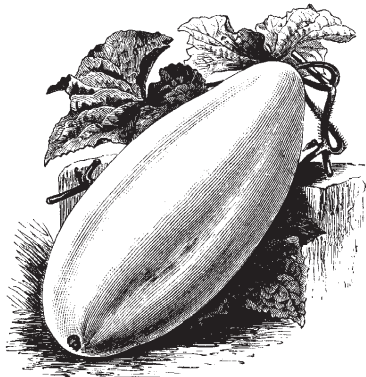
In



Gardens



By Sharon Rempel



DIG: Diversity in Gardens

Researched and written by Sharon Lynn Rempel

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Gardening is the #1 hobby in North America.

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I think people must become empowered and involved in grassroots conservation efforts in their own communities and backyards. The media focuses us on doom and gloom, not the beautiful diverse world around us. We can make a choice in what we want to eat and how it is grown (organically or conventionally). Collectively we can co-create a world where the conservation of seeds and the honoring of diversity is celebrated.

Gardening is the #1 hobby in North America. Through this huge number of people we could make sweeping changes in our lives through grassroot action. One seed saved, one person making a difference multiplied by hundreds of thousands of people and seeds and actions. That's grassroots action.

Never under estimate the wisdom and power of a passionate gardener, or a seed!

Sharon Rempel



## Zucca Melons *Lagenaria ciceraria*

Huge and amazing Zucca Melons were grown in the Okanagan/Similkameen valleys from 1934-1955. They were colorless and tasteless, but the thick rind was idea for making 'candied peel' cubes for fruit cakes. The pulp was used to make 'jam' using alfalfa seeds, food color and sugar. Seeds were planted 25 feet apart and the melons grew 4 feet long and up to 150 pounds each!

The people who handled the Zucca Melons called them 'greased hippopotamuses'.

(See page 24 for more information about the Zucca Melon)

## Introduction

A garden is a place of contemplation, relaxation, recreation and is a perfect place to conserve the bio-diversity of our food plants. Most of our food plants are grown from seed, except for potatoes and fruit. Seeds are time capsules linking the first people who planted crops 10,000 years ago with gardeners today and in the future.

People and plants have coevolved in all areas of the world. It is important to conserve traditional varieties as well as the knowledge and stories about using the plants. The most practical and economical conservation policies are designed and carried out by farmers and gardeners who maintain seed collections, in their fields and gardens. That way the plants continue to evolve with their people.

Many of the heirloom varieties that came with immigrants in the 19<sup>th</sup> century are the ancestors of our modern food crops. These living heirlooms are often kept in families for many generations but as the old people die the seed must be passed on to new gardeners. When a plant becomes extinct invaluable genetic characteristics are lost as well as the potential enjoyment and use of the plant.

Have you noticed there are some plants that really interest you, and sometimes a herb, or flower, or a particular tomato will call to you. If you grow the plants that make YOUR spirit sing and that thrive in your region then it is important to keep those seeds and plants alive by sharing seeds with others. Think about setting up a *Seedy Saturday* seed exchange event in your community. New links and friendships develop around forming a 'community' of seed swappers.

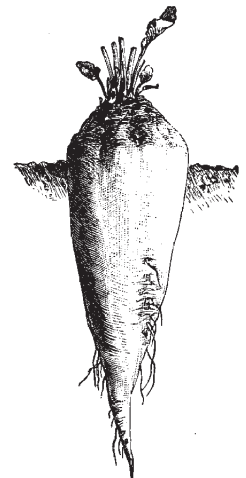
Another type of community, The *Slow Food* movement, celebrates the conservation of regionally adapted varieties that are a vital part of the cultural heritage of regionally produced food. People in this community LOVE good food that has been prepared with regionally produced quality ingredients by people who love to share their favorite foods with others.

In all countries there non profit non government organizations (NGOs) and traditional farming groups working to preserve traditional farming practices, folk knowledge of plant use and conservation of heritage varieties of plants. These groups rarely have government funding and survive on the visions and energies of each member who works in their own yard with their favorite plants.

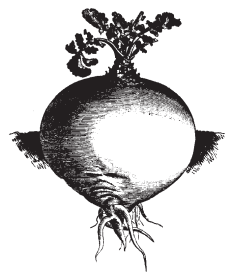
The heritage seed saving movement began in the 1970s in North America with *Seed Savers Exchange* in the US and *Seeds of Diversity Canada*, formerly the *Canadian Heritage Seed Program* in the 1980s.

And the grassroots organic groups are another community. They encourage farmers and gardeners to produce food for feeding local people. They have a zero tolerance to GMO (Genetically Modified Organisms) and irradiation. The movement also supports fair wages for all farm workers and seeks to make links between the farmer and consumer.

Food is a very political issue and seeds produce our food in 'agri-culture'. The hand that controls the seed controls the food supply and the battle is on to keep that seed in the hands of people, not corporations. With the introduction of GMO into major food crops, the drastic alterations that will affect our seeds is almost incomprehensibly complex.



Whyte's Black Beet



Green-top  
Swedish Turnip

Supermarkets are full of ‘cheap food’ that come with hidden costs. These include low wages paid to agricultural workers and food grown chemically with ‘high input’ agricultural practices that contaminate people, soil, water and kill other life forms. Let’s not forget the transportation, preservatives and packaging costs so food can travel thousands of miles, too.

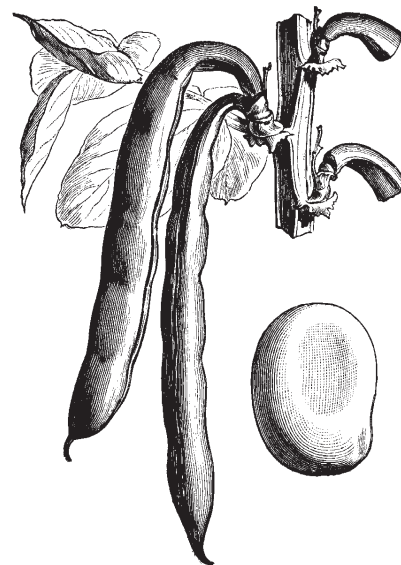
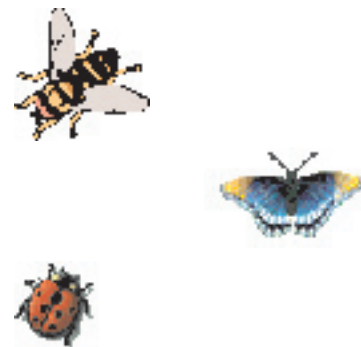
“Commodities”, not varieties are marketing economics. Three main apple varieties fill shelves across North America and Europe. There is similar uniformity in other products, too.

Homogeneity is happening in all aspects of life. All over the world we are wearing the same clothes, eating the same fast foods and each big city is beginning to look like other big cities. You can find the same few varieties of fruits and vegetables in grocery stores around the world. Not only is this boring, helps induce food intolerances with limited diversity it is a waste of the rich diversity of plants waiting to be tasted. And ecologically it is a recipe for disaster, by relying on a few varieties.

The loss of cultural diversity happens by the encroachment of dominant societies, acceptance of economic theories that are not sound ethically and ecologically and by human complacency. As the detail and diversity of locality are lost so are the richness and identity of the culture.

All of life is dependent on plants. Plants provide food, shelter, medicines and fibers for clothing and colors for dyes. Plants are so important yet their survival is often taken for granted. Food supplies of the future are dependent on the genetic resources contained in the seeds and without conservation seeds and plants die.

If you grow a diversity of plants in your garden you can attract a great deal of insect and bird diversity. Critters can be wonderful helpers in the garden and add to the life energies of the garden. ‘Native’ plantings and xeriscaping do not produce food for humans nor conserve agricultural biodiversity. These two trends in landscaping are alternatives to lawns but provide little in the way of nourishment for the spirit (beauty and color) or the body (food).



Seville Long-pod Bean

## Food Diversity

Each culture has developed with unique ways of using plants in daily life. People cannot exist without plants and have co-evolved in areas all over the world with specific plants for medicine, food, shelter and spiritual use. When they travelled to new countries they brought their seeds and plants with them. Sometimes the plants adapted, sometimes they didn't. In early days seed saving wasn't a hobby, it was a necessity for survival.

Since the commercial seed trade started in the late 1700s, the 'new and improved' varieties encouraged people to buy seed. Sometimes the new names were simply put onto old varieties as a marketing gimmick.

In the name of profit, people have been convinced that they 'had' to have the new seed. This is how commercial agriculture has evolved. Frances Moore Lappe's book, *Diet for a Small Planet* reminds us that there is enough food produced for everyone. Politics, greed and distribution ensure poverty survives on Earth.

Today, the motivation to search out, grow and save old varieties starts at the seed racks at the hardware store. Recognizing the dwindling diversity of varieties and high prices may lead some to start saving their own seed. And the 'hybrids' often do not breed true. So people start looking for other alternatives.

Some seed savers are compelled by some mysterious force to plant the seed so the plant can make more seed and this seed shared with other people. These people often end up having their own seed businesses. Others save their seed to avoid GMO and hybrid seeds.

Bless those who save seeds for they shall hopefully grow wise with the words of the seed, and the Earth and help lead us to a reality where we live on Earth more gently.

The bottom line - the old varieties must be saved if future generations are to enjoy the diversity we now have on earth. If you save your own seed you don't have to depend on the large seed companies to give you seed for your food each year.

Cultural diversity is something to celebrate as we learn to appreciate our own and our neighbour's interaction with plants and life. People are social creatures and are naturally curious about other people and the plants they grow in their gardens. Imagine travelling to another country and visiting home gardens, speaking with gardeners and eating the simple traditional foods at their kitchen table. That's grassroots tourism at its finest.

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Bush, or Crook-neck Squash

## The Big B word - Biodiversity:

Biodiversity deals with relationships and linkages. 'Biodiversity' is the variety of all living organisms and the genetic diversity within these organisms. It is also the various energy patterns formed as living things interact with other things. We just need to explore some of these patterns or ecosystems to be dazzled by the wealth that sustains human life and well being. We can then see how fragile these living webs are to human destruction by war, pollution, development and other selfish human activities.

Plant diversity is complex which makes plant biodiversity conservation work a challenge. Each plant species has its own set of genes. These genetic characteristics can be expressed differently between plants within the same species, depending on climate, soil conditions, rainfall and many other factors.

These characteristics could include the ability to survive in dry or cold climates or resist diseases. When a plant becomes extinct we lose the characteristics that might make that plant a future source of food, or medicine or enable it to fight off diseases that could wipe out other plants. This variety of characteristics is called "genetic diversity".

Plants live with other plants forming a community that is part of an ecosystem. People live with plants in a constantly changing web of life. When we alter one part the whole system changes.

When we think like this we fight to save parkland from developers and recognize the value of conserving a green belt of agricultural land around urban settlements. Few towns or cities

have realized they must limit growth to sustain a healthy quality of life in the urban center.

Contrary to what corporations and economists envisioning WTO and GATT think, life on Earth is not here for the exploitation and domination of humans. Centuries of colonization has altered ecosystems and displaced people from their agricultural lifestyles. This gene-ocide vision now threatens the existence of all life: nuclear weapons to destroy our human 'enemy' (ourselves) will kill all life on the planet; land cleared for cash crops; human labour exploited to produce 'cheap' marketplace goods; streams polluted by industry. You can add a few more to this list I'm sure.

If we don't blow ourselves up with the nuclear weapons, allowing corporations to exploit human lives and global resources for corporate profits is another a slow form of killing not only human spirit but 'life'.

We must believe that we can create another reality and it is through seeds and biodiversity we find the route. We need to save biodiversity and stop building weapons of destruction.

Biodiversity conservation is not a new idea but the concept has been linked mainly to saving tigers, lions and bears from extinction, conserving wild habitats and jungle plants as possible medicines for the future. However it is a much bigger idea. At home it might mean conservation of wild plants in a city yard for birds or saving plants elephants like to eat if the jungle is your home.

To a Canadian farmer, it might be saving the seeds of the older wheat varieties that did well in the region before the introduction of chemical

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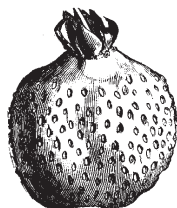
fertilizers and herbicides.

Agricultural biodiversity includes the genes, species and ecosystems that produce food used by humans directly or indirectly. When we encourage the destruction of crop lands in Greece to put up more tourist hotels, we are encouraging the destruction of traditional varieties of wheat and barley seeds. When we encourage development on agricultural lands around cities and in parklands, we are throwing away valuable resources in the name of profit for developers.

Plants contain chlorophyll which gives them something we don't have - the ability to produce their own food through photosynthesis. They provide oxygen and beauty. They aren't dependent on us and we are totally dependent on them.



Red Alpine Strawberry



Common Hautbois,  
or Musky Strawberry

## Crop Origins and Dr. Vavilov

We owe a lot to a Russian scientist, Dr. Nikolai Ivanovich Vavilov who travelled around the world in the 1920s noting where crop plants grew with great diversity. Sometimes the wild ancestors of the crops were present, and other times only a great deal of diversity was apparent.

These Vavilov centers, or *Centers of Origin* and *Centers of Diversity* are usually in the tropical or subtropical regions with wide variations in soils, climate and people with various needs which force diversity within the crop. Vavilov set up four hundred research institutes and collected seeds, including 26,000 strains of wheat. The seeds formed the world renowned collection at the Vavilov Institute in St. Petersburg, Russia.

Unfortunately Stalin didn't agree with Vavilov's theories and sentenced him to end his life in a camp in Siberia. Yet the ideas of the visionary Vavilov, as well as many of his seed collections form the foundation of our agriculture biodiversity conservation efforts globally.



Genetic and crop evolutionary theories clashed with politics and Stalin sent Dr. Vavilov to Siberia.

“Landraces” or “folk varieties” have evolved to meet the needs of people in different climatic regions; Both people and seed are incredible sources of variability and wisdom.



## Plants and Their People

Plants come to North American from all over the world. For example, Vavilov said beans originated in South America, melons from West Africa, tomatoes and potatoes from the Andes, wheat from the Fertile Crescent in Iran/Iraq and peas from Asia.

All our food plants were once wild plants. The domestication of crops began when people settled in one area to sow and tend plants. Crops would cross with their wild relatives or farmers would select plants with desirable characteristics to meet their local and personal needs. New variations came from these processes.

“Landraces” or “folk varieties” have evolved to meet the needs of people in different climatic regions; Both people and seed are an incredible source of variability and wisdom.

Local culture and biodiversity are very much linked to each other as well as traditional knowledge and resource management skills. The coevolution of societies and cultures with their crops is linked with local climatic and geographic conditions. Often there are also spiritual ties people have with the environment and plants.

So there are landraces of plants adapted for every region and climate and soil of the world. We don't need to create new varieties in test tubes, we need to explore what has already been developed by farmers in their fields. A plant grown in one area might taste very different or have different medicinal value from the same plant grown in another area.

Farmers and gardeners were and still are the world's best plant breeders. A farmer who walks the land develops a

relationship with that land. For many years, the seed was simply taken from a farmer who believed in sharing seed as a human rights issue.

### ***Plant Breeding today:***

Seed companies have traditionally been small family based seed companies. In the early 1900s there were over 2000 seed companies in North America; in the early 1990s less than 200. Governments and universities became involved in plant breeding in the 20<sup>th</sup> century. For the past 50 years plant breeding has been handed over to geneticists and other scientists, and large corporations are the world's largest seed companies.

In the 1960s the industrialized countries agreed upon the concept of *Plant Breeders Rights* (PBR) where a breeder could officially register a variety and obtain royalties by all who planted the seed.

This concept of *ownership* implies that everything on Earth is either free for the taking by the biggest or wealthiest, or is “for sale”. It is a part of the outdated patriarchal “power at the top” system that has controlled the world for thousands of years.

Alternatively we could develop a cooperative type system, where exploitation and domination are not the verbs of action. If there isn't anyone to ‘steal’ what you have, then there is no ‘enemy’ to defend yourself against. This is a reality we can create.

PBR does not take into consideration the rights of traditional communities, yet it is with their labour and their relationship with plant and land that has produced the heirloom varieties and landraces rich in genetic diversity. Varieties have been taken from farmers

by corporations and breeders and used to create 'new' varieties that are then resold to the original farmers. Often it becomes illegal to use the variety without paying the 'improver' a royalty. This process is enforced by governments and corporations who send out 'seed police' to rip up illegal crops and fine the offenders.

During the 1980s Shell Oil was considered the largest seed company in the world. Today, Monsanto is the second largest seed company in the world; they have a patent for the Terminator Gene that renders the seed unable to reproduce itself. Introduced into crops this would make it impossible for farmers and gardeners to save their own seed. Talk about 'control issues'!

Large multinational companies own gene splicing labs, fertilizer and chemical factories. Billions of dollars of tax money is being spent to help companies develop new hybrids that are dependent on chemicals and inputs for growth and survival. And to make something 'new' the genes can be altered in a plant so the variety can be protected with patents and registration and money paid to grow the variety.

Yet, as a grassroots call to action against this control, in backyards all over the world people are taking an active role in keeping favorite plants alive by saving seeds and sharing them with others. And farmers are discovering that they DO have inner wisdom to select their own varieties. These varieties are usually suited to organic farming conditions, not 'high input' intensive agriculture systems.

## **ACTION ALERT !**

Take a look at our 'On Farm Research Guide' designed to help people do their own research work and answer the questions THEY feel are vital to their agricultural systems.

Website:  
<http://members.shaw.ca/oldwheat>

(It is posted as a PDF file)

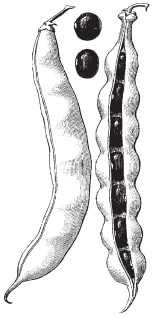
or order through the form at the back of the booklet.

There are over 22,000 varieties of beans in heritage gardening collections in North America



## Heritage or Heirloom Plants

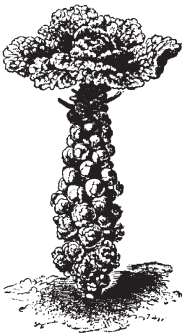
There is a lot of debate when it comes to defining a 'heritage' seed. Some people state that the plant must have been around prior to 1930, and others prior to 1950. In a very simplified botanical definition a heritage seed is "open pollinated" or "breeds true" generation after generation, assuming simple seed saving techniques are practiced to ensure purity and no cross pollination.



Pods of the Tall Ivory Butter Bean

'Heritage' is a term often used interchangeably with 'heirloom' or 'traditional' or 'folk' seed. Defining what is a heritage plant is tricky; it is a statement reflected in the judgment of the person defining the term. The variety may have been maintained by a seed company, or a family or cultural group.

Heritage seed may come from a plant that came over with a person from the 'old country' and provides a flavour, taste and shape of that person's cultural identity. Heritage seed represent decades and centuries of selection and adaptation and thus produce tasty and hardy plants in the regions they were selected within.



Dwarf Brussels Sprouts

### **Hybrid or open pollinated:**

Some heritage varieties are composed of hybrids that produce offspring that breed true to the parent form. Many modern hybrids often produce a plant for only one generation or if seed is produced it is sterile, or will not 'breed true' to parental form.

Many modern seeds are patented by the company or person who 'developed' the variety and it is illegal to save the seed. The worst scenario imaginable is

agribusiness' *Terminator Gene* which triggers the plant's reproductive cycle to not produce seed.

Open pollinated plants may be self fertile, like tomato, which means the pollen from one plant usually fertilizes an ovary on the same plant. Or it might be an outcrossing variety like corn where the pollen might fertilize the same plant or it might blow up to .25 miles to another plant. Squash has separate male and female flowers on the same plant and requires help from an insect or human hand to get the pollen to the ovary.

## **ACTION ALERT ! Family Heirlooms**

Ask your relatives if there are any family heirloom plants. It might be a favorite rose or tulip or a wheat variety or a favorite basil plant or bean. There will probably be a story or two with that heirloom and it's good to write the story down. Think about offering your plant to others to make sure the plant doesn't die.

## **ACTION ALERT ! Neighbour's Treasures**

Ask the neighbours if they have any family favorites in the garden. Often old people want to give away their plants to make sure the variety will continue long after the old people stop gardening. If this isn't done, when the family cleans out the house the seeds are thrown out.

Are heritage seeds better than ‘modern’ seeds? That depends on your evaluation criteria. For a few crops such as corn and broccoli hybrid seeds produce plants with increased vigor and dependable uniformity.

Uniformity is important for mass production, a consistent harvest and mechanical harvesting.. The vigor is often dependent on chemical inputs and optimum growing conditions however.

Modern agriculture practices demand varieties that have maximum yield, uniformity in shape, size and maturation, tough skins for shipping and an extended shelf life.

Most heritage varieties were developed before the 1960s high input agriculture phase so might well be suited to organic or low input agricultural systems. Heritage varieties may be equally as good as the ‘new and improved’ but have fallen out of ‘favor’ because they are not perceived as valuable by the high input oriented agriculture community.

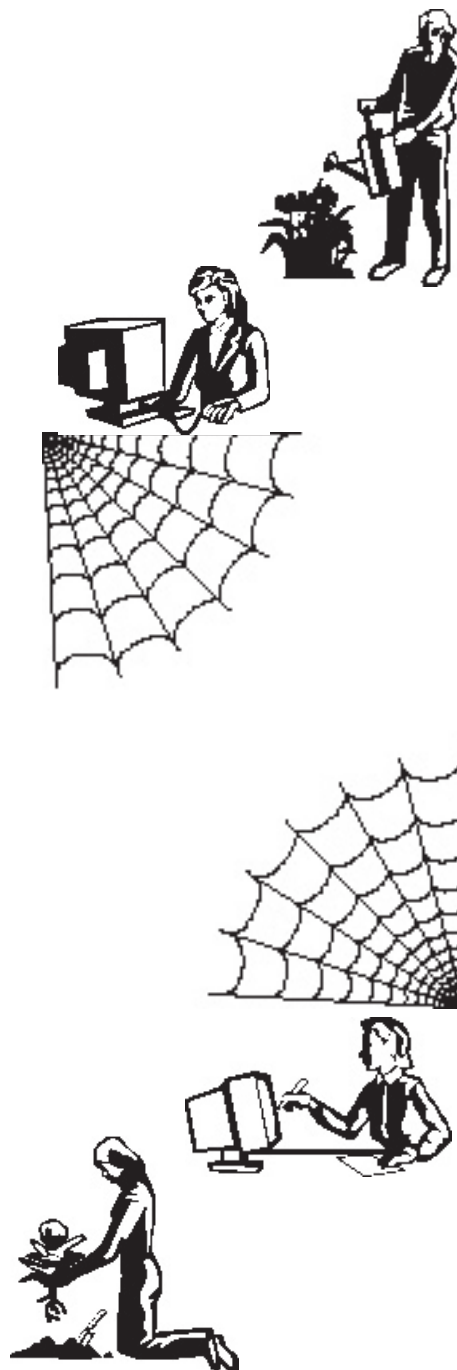
Heritage varieties have been the sources of genetic material for plant breeders and will form the genetic backbone of varieties of the future. Plant breeders ‘shop’ for genetic materials in gene banks, farmers’ fields and from previous varieties.

Many gardeners grow both modern hybrids as well as older open pollinated, or ‘heritage’ varieties. Some people just grow a heritage variety to keep the seed alive and swap it with others. Others constantly experiment with different varieties just for fun.

Organic plant breeders recognize that they can breed varieties that include ‘horizontal resistance’ as opposed to the ‘vertical resistance’ used by high input agriculture system breeders. Vertical

resistance targets on specific strain of a disease or pest, while horizontal resistance keeps a broad genetic base in the plant population to meet the ever adapting changes.

Networks of organic plant breeders exist in the world. “ECO PB” is the European group and a similar group is developing in North America. Contact a local organic certification agency for help in finding organic seed.



## Who Owns the Seed?

In many cultures, seeds and land are considered common resources for all life forms to share. Farmers have been selecting seeds in their field and saving their own seeds since the first woman farmer started doing this thousands of years ago.



There are debates in the United Nations if farmers really have the right to save their own seed. Corporations want to control the seed and make money by selling the seed.

World Trade Organization (WTO) countries require member states to protect plant varieties with patents; farmers are required to pay royalties when using the seed. All international trade agreements including MAI and GATT rely on uniformity, common lists and common ways of production for handling agricultural commodities. Wheat is simply a commodity for exchange on a global trade board.

This cheats the 200,000 varieties of wheat developed throughout the world. And the same is true for all other agricultural products. People have become 'production units' to produce and purchase goods in a global economy. Cheapening life to this degree is immoral and needless to say does nothing to encourage conservation of biodiversity.

Plant Breeders Rights (PBR) legislation in Canada, Europe and other countries control which varieties can and cannot be sold legally. No variety can be legally marketed unless it is registered on the National List.

In the 1970s seed companies submitted names for listing and many old varieties were included, many not. In

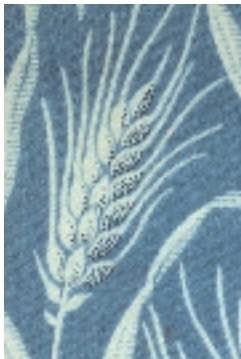
1980 a Common European Catalog was published that amalgamated the various country catalogues. Over 1500 varieties said to be identical and registered under separate names were dropped.

The judges looked at vegetables and decided that many looked the same, so therefore must be the same. They dropped the common names associated with many plants, lumping them together under one name. Genetic engineering and DNA fingerprinting techniques evolved and by the 1990s it was a scientific reality that plants that looked the same were not necessarily the same genetically. Over two thirds (1000) of the dropped 1500 varieties were found to be different!

The Common Catalogue exercise eliminated a great deal of local cultural lore as well as common names and identification of diversity in an attempt to simplify and homogenate.

Canada has national lists of wheat and potatoes; only approved registered varieties can be legally sold in the country. Agribusiness 'high input' agriculture interests control the review boards and only selected varieties are approved for registration. When a variety is 'deregistered' it becomes illegal to sell it and seed is dumped.

In 1999 a biotechnology firm had a contract with Agriculture Canada to review the "Canadian Registration of Variety" process. When I wrote my letter with comments on the proposed Variety Registration and the firm's process for getting 'public' input, I protested the lack of organic farmers consulted as 'stakeholders'. I was sent a letter of intimidation threatening legal action, as was anyone who wrote and criticized their process. I never heard back from the Minister of Agriculture, or my MP regarding the somewhat



biased consultation process.

Registration regulations were designed to protect the consumer from rogue seed traders and clear up confusion by ensuring that varieties were indeed what they claimed to be. To be registered a variety must be distinct, uniform and stable, so it can't change from one generation to the next. In the UK it costs \$2200 to register a variety on the National List and \$700 per year to maintain it.

It is simply too expensive to maintain most heritage varieties, even if they could pass the uniformity and stability criteria. Heritage seed groups cannot afford the registration fees to protect the varieties. And in some cultures it is considered ethically and spiritually wrong to put patents on commonly owned genetic resources.



## The Green and Gene Revolutions and Gene Banks

We are in the Gene Revolution that started in the 1990s. Scientists state that without biotechnological use of biodiversity we will not be able to feed the world's population. Billions of dollars are being made by companies in research to develop new hybrids that are dependent on chemicals and inputs for growth and survival.

In the 1960s Dr. Norman Borlag and other scientists were determined to find a solution to world hunger and famines. Funded by the Rockefeller Foundation and other agencies, they developed high yielding varieties of wheat, corn and rice and introduced these crops into Mexico and India. This was the beginning of the Green Revolution.

These high yielding plants required chemical fertilizers to produce high yields and relied on herbicides to eliminate plant competition in the field. The large monoculture fields attracted insect pests and pesticides were required to keep the plants alive. Yields increased and some people were fed. Countries took bank loans to pay for the high yielding seed and chemicals. The idea had promise but the economic and environmental price tags were high.

The new varieties displaced traditional landrace varieties grown by farmers. Hunger and famines continued and countries became dependent on international loans to buy hybrid seed. People became dependent on the new seed each year and there was increased loss of traditional knowledge as well as of the old varieties. In areas where Green Revolution crops have been introduced there is usually a loss of

A Gene Bank is a large cold room where temperature, humidity and light conditions are optimized to prolong seed life. Seeds die quickly when exposed to high temperatures and high humidity. Seeds are commonly stored in airtight containers, given an accession number and a catalogue is kept of each gene bank's accessions.

traditional varieties, resulting in a loss of global biodiversity.

In the 1970s the United Nations recognized the loss of biodiversity and countries began to collect seeds and store them in gene banks.

A Gene Bank is a large cold room where temperature, humidity and light conditions are optimized to prolong seed life. Seeds die quickly when exposed to high temperatures and high humidity. Seeds are commonly stored in airtight containers, given an accession number and a catalogue is kept of each gene bank's accessions.

These collections are considered repositories for genes for new foods. Although all say they conserve seed to preserve the "integrity of the seed", in spring 2002 the Canadian Gene Bank manager stated there was no difference between GMO, organic and conventional seed in the gene bank.

Does this mean that in 'grow out' the gene bank will adhere to the grow out distance established as 'safe' to avoid GMO contamination or will seed grow side by side? If this is the same at other North American gene banks then likely we already have low grade contamination in our national seed collections. Private collections are a reality for the organic movement that has 'zero' tolerance to GMO in food and seed.

Many countries have privatized their national collections because they cannot afford to care for them. Corporations are happy to take over as funding is cut in the areas of social programs, medical care, genetics resources conservation and research. All have the potential to generate a lot of money.

## Diversity is Security

Growing a diversity of varieties in the garden is a long term food security strategy. Immigrants to Canada grew several varieties of each crop in their field as they experimented with the new growing conditions.

In many parts of the world people grow landraces of plants or mixtures that will ensure a crop. In some monasteries in Greece there are fields planted with barley, bread and pastry wheat varieties. If one strain is wiped out there still seed for bread.

### *Plant Choice*

You may not be a gardener and are wondering how the choice of plants affects you. You buy food. Due to large scale agriculture and uniformity for commerce there is not a great deal of diversity when it comes to choosing food from the grocery store or seeds from the garden centers.

Some people have developed allergies to commonly available food. In the global economy that insists on uniformity, a few varieties feed us. Is it possible that our bodies are becoming intolerant to the narrow gene base, or the chemicals in the food ?

Does a locally grown organic carrot taste different than a store bought conventionally grown carrot? Start experimenting by purchasing named varieties from local farmers. See how your body feels when you eat these foods. You will begin to see the diversity between varieties through your eyes and tastebuds and 'gut reaction'.

Some consumers are wondering if some of the older varieties might be





worth exploring. Others remember the scents and tastes in grandma's flower garden and want to share that memory with friends and family by growing or purchasing old varieties.

## **Seed Diversity**

It is important to discuss genetics when talking about heritage open pollinated varieties. A diverse gene pool is important as a strategy for survival of the variety as well as the other species (like humans) who are dependent on the crop.

The diversity inherent in open pollinated varieties allows some to survive if disease or unusual weather conditions arise. In the case of hybrids, what destroys one plant has the potential to destroy them all, such as the corn blight of 1970. And reliance on one or two varieties can cause famines or major crop failures such as the Irish Potato Famine of 1845.

The poor in Ireland relied on the potato and grew the highest yielding variety, "Lumpers". In 1845 the potatoes were hit with a previously unknown fungal disease, potato blight. 90% of the tubers rotted in the field. One million people died in Ireland in 1845 and another million emigrated from Ireland. By the 1850s growers imported more varieties for widening genetic characteristics of potatoes.

The best way to survive a pest or disease outbreak is to plant mixed crops using traditional crops with variable characteristics, however variability doesn't necessarily ensure resistance to disease.

## **Catalogues and plant names**

The first seed catalogues were produced in the early 1800's and by the mid 1800s a profusion of catalogues offered the remote gardener a cornucopia of varieties. Seedsmen were clever characters; they offered the 'new and improved' each year, sometimes just renaming last year's variety. Different companies might have named the same plant with two different names.

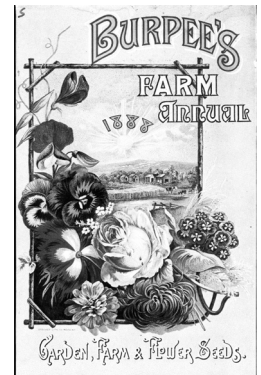
Names would also change with a variety depending on the area one lived in. Common names would change as people moved around and exchanged seed with others. Don't rely on the name of a seed; the only way you can really decide if you like a variety is to try it.

In the early 1900s there were over 2000 seed companies in North America; in the early 1990s less than 200. Large seed firms now grow many of the varieties offered in local garden centers. You may need to get seed catalogues or visit a seed exchange if you hope to find the more unusual or heritage varieties.

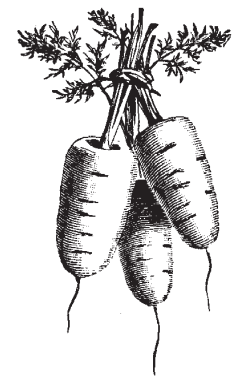
Buying from a local seed company is a good idea. If the seed isn't fresh you can always take it back. They may be offering seed of locally adapted varieties. But sometimes you just have to try the unusual varieties from another part of the world.

A few years ago it was difficult to find a seed catalogue that offered heritage varieties. Now all catalogues offer 'old favorites' that offer diversity of shape, color and taste.

There are many companies offering their seeds from catalogues. Check out the web sites and think about ordering some seed catalogues.

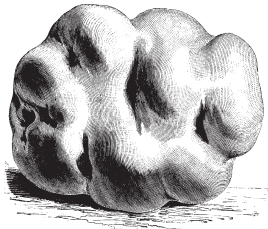


Early Garden Catalogue from the 1800's. In the dark winter days the seed catalogue bloomed 1



Early Scarlet Dutch Horn Carrot

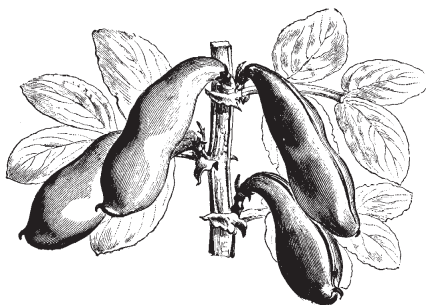
In England collections of ornamental plants are considered a vital component of the wonderful English gardens. The old scented varieties are becoming more easily found in North America through specialty nursery catalogues and the popularization of 'heritage' gardening in magazines.



Chardon Potato

## **ACTION ALERT ! Beautiful Beans**

There are 2200 varieties of beans in North America but you will commonly find a dozen varieties in the grocery store. Beans are easy to grow in containers and you never know when you'll plant the magic bean with a giant at the top of the plant. Beans are really beautiful to look at. You might want to make a bean box with all the varieties of beans you can find. Make sure you keep a record of the names of the beans because many beans can look exactly alike. There are often interesting stories behind names of plants so keep a record of your collection. I wonder what bean plant Jack climbed up to find the giant?



Broad Windsor Bean

## **ACTION ALERT ! One Potato, Two Potato**

Visit three grocery store produce areas and take a survey of what potato varieties are offered. But what would you do if you had food allergies and couldn't eat these potatoes? Do a little brainstorming with yourself or friends and make a list of alternatives.

## ***Consumer Demands make a Difference***

Consumer demand will influence what is sold and at what price. It will also affect what a garden center offers as bedding plants and seeds. Novelties often command high prices. A heritage tomato plant was being sold for \$4.99 in 1998, with a 'regular' variety going for \$1.49. Heritage seed is now trendy. Heritage gardening is the newest trend in gardening.

You vote with your buying power. If you want open pollinated seed, ask your seedmen and garden center to stock these for you. If you want diversity in your garden, you will have to look beyond the seed racks. If you really want diversity you may have to support a local farmer to grow heritage varieties and save the seed, or grow it yourself.

## ***Cultural and Individual Diversity***

Plants and people have co-evolved in all parts of the world. When people move to another country their diet often changes and kids more easily adopt the eating habits of the area. But when



## **Snail Plant**

Native of South Europe. - Annual. A creeping, spreading, slender-stemmed plant. This plant is not edible but is grown on account of the snail shell shape of its seed-vessels.

people from the same homeland gather together they often prepare traditional dishes from home. Food is a big part of cultural identity. It's fun to experiment and taste food from other cultures. It is one of the best ways to sample and celebrate the world's diversity of tastes and flavors.

We have heard "we are what we eat". Our food choices are often influenced by our cultural background as well the part of the world we live in and our personal tastes. What do you like to eat? What does your family like to eat on special occasions? Do your grandparents use herbs or other plants for cooking? What herbs? What kind of vegetables are bought or grown?

Does your family use herbs for medicine? Do they use special herbs in cooking? Can they always find that favorite herb in the grocery store or do they have it sent to them from another country?

Plants are used by different cultures in spiritual practice too. Two examples. In the Greek Orthodox Church basil and rosemary are used in many church celebrations throughout the year. Basil or tulsi is a sacred plant for Hindus too. Sage is used by many North American native people in purification ceremonies. There are many other uses of plants by all cultures.

There are certain plants that appeal to people all over the world. Watermelon is one such crop. Watermelons come in all sizes and four colors. Their distinctiveness often has something to do with their common name. The 'Moon and Stars' fruit and leaves are covered with yellow 'stars' and a big yellow 'moon' blotch.

## **ACTION ALERT ! Seed Sleuth**

Ask what varieties of vegetables and fruits your family grew in their garden when mom and dad were children. Ask what special foods your family likes to eat. Does your family have seeds of their favorite food or medicinal plants? Grandparents are good sources of information for these questions because in 'the good old days' people grew a lot of what they needed and wanted to eat. They had to grow varieties that did well for them, as they didn't have the store as a 'back up' for food.

Compare these answers with others in class. Then if you feel really ambitious ask your neighbours and others in your community. You will find a great deal of diversity in food choices. You might think about getting some seeds of your favorite plants and growing them in your garden.

## **ACTION ALERT ! Weird is Wonderful**

There are purple tomatoes and potatoes, white eggplants and black radishes. What is 'weird' to me may not be weird to you, depending what country you've come from and what you are used to eating. You might want to make an inventory of the various produce at the local farmer's market and compare that list with an inventory at your favorite supermarket. Did you find more selection at the market?



Moon & Stars  
Watermelon

## ACTION ALERT ! Botanical Bazaar



Make use of smells and tastes. Assemble your bazaar with 20-30 different edible plants or plant products with strong flavors or scents. Here are some ideas:

Herbs (fresh or dried): mint, thyme, basil, sage, rosemary

Spices: (whole or ground): cloves, cinnamon, ginger, coriander

Oils: lemon, orange, vanilla, almond

Fruits: kiwi, banana chips, figs, coconut, mango juice

Vegetables: seaweed, bamboo shoots, water chestnut

Beverages: coffee, tea, cocoa, single herb teas

Flowers: rose petals, clover

Sweets: aniseed, peppermints

Strong smelling: garlic, chili, mustard (be careful that the chili oils don't come off on your hands, then you rub your eyes; you can get burned!)



Double-curl dwarf  
Parsley

“Fresh is Best”

Work in pairs.

Blindfold your partner.

Select 10 items from the bazaar and give them, one at a time to your partner asking them to give each a sniff.

If they don't recognize the smell tell them what it is.

Ask them to recall the different items from memory.

Give clues by letting them sniff or taste a small piece or drop.

Now change over.

Question:

Are you able to identify more familiar foods more easily than the 'exotic' and less familiar?

## ACTION ALERT ! Taste The World

Take a taste of another culture. You could set up a Cooking and Shopping Tour and Workshop. Decide what culture you wish to explore, ask around and find the name of a great cook from that community to help you set up the tour and workshop. Learn how to prepare traditional dishes and discover the secret shopping spots for authentic ingredients.

Or you could invite friends to bring a favorite dish to a potluck. Ask them to choose a dish that reflects traditional food choices from their homeland and ask them to explain the ingredients. People born in Canada might have to go back to their parents, or grandparents generation for homeland dishes. It might take a little searching to find ethnic groceries selling the special ingredients, too. Going back to your roots can be a great adventure.



## ***Introducing New Plants and Seeds to Canada***

When immigrants came to Canada a hundred years ago they often brought their favorite seeds with them. Sometimes they sewed the seeds into the hems of their clothes so they would be safe from the customs inspectors.

Today, if you want to import seeds into Canada from another country you may have to obtain an import permit or other document certifying the seeds are not carrying diseases. Most garden seeds are not a concern to the Agriculture Canada officials but there are some seeds that are at higher risk of bringing in a new disease or pest.

Unfortunately the process is not user friendly, even if you are a scientist and understand the system. A wonderful man, Dr. George White, a pathologist with Agriculture Canada, explained to me that we can never be **100% sure** with anything that's living. That's the miracle of the diversity of life. We can take the best precautions we can, and use our common sense, and continue to bring in new plants to see how they adapt to our country.

Dr. White would assess the possible risks, on a case by case situation and he would make his recommendation for a permit for my sample importation, based on the level of risk.

Unfortunately Dr. White retired and we must deal with a system that is based on the 100% sure policy. I think a more practical route would be to work person to person to explain which countries have certain diseases for certain crops and let people be a part of the process of deciding the level of risk acceptable to take with the crop. If dialogue was a part of the process, as opposed to a fee for a six month study to assess the

problem, we would be able to work together to develop a very bio-diverse agricultural system.

When people face the current regulations and problems they either decide to smuggle in the seed or plant without understanding the possible risk with plant or soil disease from the specific area of the country. Or they decide not to bring in the plants that make their spirit sing and are a distinctive part of their cultural identity. Perhaps one day someone will challenge the system that they are being denied their 'living artifacts' of their culture and force the system to go back to dealing on a more personal risk assessment level so it is win/win for all parties.

“Red Fife” and “Turkey Red” wheats came to North America in the mid 1800's from the Galicia area of Europe. They are the foundation wheats of the “Bread Basket” of the world.



## Plants as Medicines



Rose Hips

In all traditional cultures there have been healers who use traditional medicines made from plants in the neighbourhood. Some people call this type of medicine ‘natural medicine’. In North America naturopaths and homeopaths are two types of natural medicine doctors. They can help you discover which herbs might be useful for you.

In traditional healing plants are often used in combinations with other plants. Some people feel herbal medicines are safer than drugs from the pharmacy but often the difference is in how the plant is prepared to make the drug accessible. Some people will have reactions to some substances and others will not. There is no such thing as an absolutely “safe” plant for every person.



Echinacea

Have you ever heard your mom say “I remember grandma using such and such when I was sick as a little child”? Chances are ‘such and such’ was a special folk culture remedy. Sometimes these “pass along” remedies are called “old wives tales” but drug companies are starting to listen to the old remedies and traditional knowledge as they look for new drugs to patent.



Burdock Root



## ACTION ALERT !

### Who's Herb?

Most people think of mint, basil, oregano, parsley, pepper or garlic when they think of herbs. There are thousands of plants used for flavoring food, for traditional medicines and for spiritual practices. Some herbs are gathered from the wild and others are cultivated. A plant might produce a certain medicinal or flavoring compound when grown in a certain area and not in another. No one really understands why that happens.

Make a list of Herbs in your house. Don't forget to check in the bathroom, bedroom, kitchen, and even the dog's food! Read the labels carefully.

## ACTION ALERT !

### Traditional Medicines

Do you know someone who has knowledge about traditional medicines? Maybe your auntie, or grandma, or the next door neighbour? Each culture has difference yet often similar ways of healing. Garlic is one of those plants that nearly every culture vows cures most everything that's wrong with people or animals. Make a list of the many uses of garlic noting the country of origin of a practice or belief.

## Novelties of the Time

### *Caterpillar Plants*

Foods and fashions change over time. In the Victorian era people grew caterpillar and snail plants as joke plants. Caterpillar plant seeds are impossible to find today, in case you want to rush out and get some for your next dinner party.

“All the species are hardy annual plants usually about 2 feet in length. The seeds are produced in caterpillar like pods. No part of the plant is edible but the pods in their green state are placed upon the dishes of salads, where they so nearly resemble certain species of caterpillars as to completely deceive the uninitiated or inexperienced”. (from *Field and Garden Vegetables of America*. Fearing Burr. 1865.)

Imagine the host waiting until their guest delicately stabbed the leaf and put it in their mouth. I’m sure several corset stays were popped as people laughed at the practical joke. A corset is a device designed to push the muscle, bone and organs of a woman’s middle section into a small shape; they were not designed for comfort or easy breathing of the wearer but they were fashionable.

A corset and a heritage variety like a caterpillar plant have a lot in common. Both were brought into fashion during the Victorian era because of social customs of the time and also by what was considered tasteful. And both have become antiques now because few people know about them or care to use them.

Perhaps people fifty years from now will look at our garden grown vegetables and wonder how people had land in their living area to grow plants.

Perhaps the food of the future will become factory farmed and uniform in size, taste and texture. Those people might look at our platform shoes and tight spandex clothes and wonder why we wore those things just as we now wonder about corsets.

Ten years ago it was difficult to find a purple potato and now they are common sights in markets.

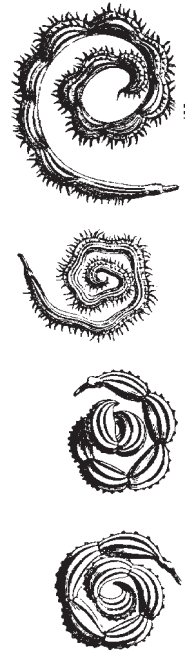
### **ACTION ALERT !** **Weird & Wonderful**

Can you think of some plants that our generation grows that might be considered funny to another generation, like the caterpillar plant seems to us? Write a little story up on the plant, just for fun. Then find out who is growing the funny plant. Is the plant safe or is it likely to be extinct within 20 years? Maybe you better think about adopting that plant.

### **ACTION ALERT !** **Say “I Love” with a Seed**

If you want to make a really special present for someone or yourself, think about the person’s favorite plant or flower, then try and find them seeds of an exotic shape or color of that plant. You might want to order some seed catalogues that specialize in that plant. Check IcanGarden website for a list of seed companies, and there are many other good seed sites, with catalogues posted ‘on line’.

<http://www.icangarden.com/>



Striped & Hairy Caterpillar Plant

Native of Southern Europe, they were grown as a curiosity as the young pods resemble various kinds of caterpillars in a very striking manner. As a vegetable, their flavour is very indifferent.



## Adopt a Variety *The Zucca Melon Story*

Question:

What's the most gourd-eous plant in B.C.?

Answer: The Zucca Melon!

That's the key - falling in love with a plant that intrigues you, inspires you and you want to see it everyday somehow. That's the plant you should grow and help keep alive, a plant that you love.



So you've decided to become a 'foster parent' for a seed. But WHAT will you save? There are many plants that will simply die because no one wants to grow them. The Zucca Melon is one example of an agricultural crop that would have died if one dedicated man, Mr. Glen Swenson from Sandwich Illinois hadn't bothered to keep it alive.

A Zucca melon is a member of the bottle gourd family, one of the oldest plant groups on earth. The fruits grow 60-180 pounds each, and the plant takes up 25 feet square of growing space. The plant was grown in the Okanagan Valley of British Columbia from the 1930-1950s. The rind was used for making candied peel, the stuff you eat in hot cross buns and fruit cake. The pulp was used to make strawberry 'jam' with food color and alfalfa seeds.

Zucca was, forgive the pun, a very big part of the Okanagon's history.

I worked at *The Grist Mill at Keremeos*, an 1870s historic site. In 1989 we decided to reintroduce the Zucca into our heritage gardens, but couldn't find the seed. Lots of photos and stories survived about the plant, but no seed. After an extensive search one man was found who grew Zucca, Mr. Glen Swenson in Sandwich Illinois. He LOVES gourds and had kept Zucca for about 25 years. Imagine what his backyard must look like with all those huge plants, but thank goodness for Mr. Swenson's love for the Zucca. He kept that seed from dying out.

He sent me seed and Zucca became part of our 'living artifact' collection; seed was saved from the plant and shared

with others. The museum set up an adoption program and there are now 75 'foster families' in North America with zucca in their yards. And each year there's an annual **Zucca Reunion**, with people travelling from all over North America to celebrate the plant that makes their spirit sing, the Zucca.

Zucca gave the site a lot of free publicity because people love the Zucca's funny shape. Also, it nearly went extinct and we saved it from extinction and began to love it again.

Can you think of other examples of plants or animals that would have died without someone caring enough to save them?

That's the key - falling in love with a plant that intrigues you, inspires you and you want to see it everyday somehow. That's the plant you should grow and help keep alive, a plant that you love.

If you want to visit or obtain seed for the Zucca contact "The Grist Mill at Keremeos", RR1 Keremeos, B.C. VOX 1NO. Phone (250) 499-2434



Sharon Rempel with an 85 pound Zucca Melon



## Saving Seeds

Many of our plants reproduce by seed. Seed saving saves money and allows you to keep the varieties that you like in your garden. Hybrid seeds may have sterile seed or the plant produced from seed from hybrids might not look anything like the parent plant. Some people save seeds from hybrids hoping that the seed will produce something bizarre.

If you want a dependable crop then an 'open pollinated' variety that will breed true generation after generation is what you should look for.

Heritage or Hybrid? Many gardeners will grow some of each in their garden. Most gardeners are researchers, experimenting with new varieties, observing the results and always trying to find something new and unusual. Gardeners have been like this for a long time. That's why seed companies are always trying to entice gardeners to buy 'new and improved varieties! Sometimes the seed company stops offering a variety and the only way to ensure your favorite variety will be in your garden next year is to save seed this year.

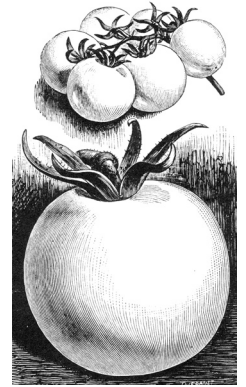
Saving your own seed isn't difficult. However there are laws in some countries that make it illegal for farmers to save their own seed. Big seed companies want to 'own' the right to sell the seed and making a hybrid is one way they can ensure dependency on their product. There are also patents put onto plants so people have to pay for the right to grow the plant.

The GMO (Genetically Modified Organism) or Genetically Engineered (GE) seed is a big worry for organic growers. There is ZERO tolerance to

GMO in organic food. Organic canola doesn't exist; the crop has become contaminated with GMO canola. There are over 40 GMO crops approved for sale in Canada. Environment Canada maintains websites that list the approved crops. There are also many crops being 'tested' for approval including wheat. As there is no independent science agency testing GMO it is up to the public to become informed and make their views known to politicians. Do it soon before more crops are contaminated with GMO.

## ACTION ALERT ! Save a Tomato Seed

Take a tomato, ideally one that tastes great and you would like to have in your garden next year, and follow the directions reproduced from "How to Save your Vegetable Seed". Then next year, plant a few of those seeds in the garden and see if the tomato that shows up looks like the one you took seeds from. It should because tomatoes are 'self fertile'. But that experiment might not work so nicely if you chose a squash or pumpkin because they easily cross pollinate with their cousins.



Greengage or  
Yellow Plum  
Tomato

"How To Save Your Vegetable Seed" is an affordable (around \$8 CAD) picture book of plant reproduction and the basics for saving seed.

Order from [www.seeds.ca](http://www.seeds.ca) then to items for sale (<http://www.seeds.ca/forsale/forsale.htm>)

or write to Seeds of Diversity Canada, P.O. Box 36 Stn Q, Toronto Ontario M4T 2L7

## Seed Exchanges and Community Seed Banks

### *Seed Exchanges*

“Seedy Saturday” is the name of a Canada wide seed swapping activity. It is a day to celebrate seeds and the people that nurture the seed.

#### *Seedy Saturday*

- is a day donated to seeds; gives folks a chance to swap and sell open pollinated seeds grown in the region and talk to other growers.

- began in Vancouver at the VanDusen Botanical Garden in 1989 with the help and support of Health Action Network, VanDusen Garden and USC Canada. The event happened on Feb. 14 as it was a Saturday and it was a loving day to think of seeds.

- won a City of Vancouver Heritage Award in 1993

- brings the various components of a regional biodiversity conservation strategy together with hopes they will network together to save the region’s genetic material.

#### *Setting one up*

Brainstorm and identify the various groups in your area who work with seeds: University plant scientists (breeders); members of the Heritage Seed Program (Seeds of Diversity); botanical gardens; local organic farming and gardening groups; local wild flower societies; local seed companies selling open pollinated varieties; historic sites with heritage gardens; local seed savers and gardeners; retired agronomists are just a few ideas....

then...

Find out who the contact people are and call them and ask if they will come with a display for the day. Ideally everyone donates their time to the cause.

meanwhile.....

Investigate the various venues for having the event; think about a good location. A centrally located facility is ideal, with room for the central display space and ideally a classroom for the ongoing lecture/workshop seminars. You will need tables for people to set up displays and some chairs behind the tables for the display people. Ideally no admission charge, or an ‘admission by donation’ policy so no one can be prohibited by attending by admission costs. Parking is a concern and bus accessibility. Will the site be muddy and or inaccessible during the event?

timing...

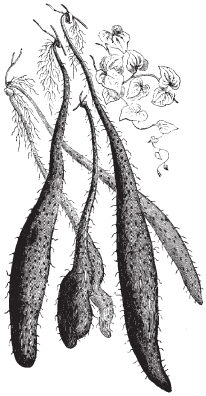
Decide when to hold the event. Spring is good, as in some areas folks divide perennials and bring them to the swap. In some areas scion wood is also sold or swapped or tubers or rhizomes sold or swapped. The timing of the event determines how many people you attract. Stanley Cup weekend, Easter, large social event in town not good times. Plan enough in advance to get your information out to societies for their newsletters, etc. Six months is a good lead time, but you can do it in 3 months.

#### *Education is a big part of Seedy Saturday*

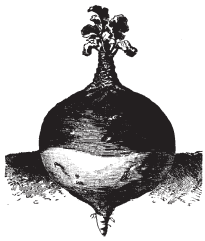
Think about the Education component of the event. Invite local experts in various components of seed conservation to speak in the classroom. Many folks complain they hate missing the talks while manning a display table or swapping seeds when talks are on; that’s the biggest problem of Seedy Saturday (too much going on at once).

#### *hospitality and food...*

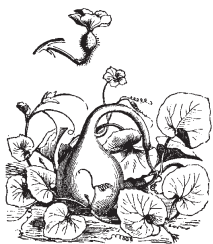
Think about hospitality for your guests, the people visiting Seedy Saturday including your display people. Food



Chinese Yam



Yellow Purple-top Swedish Turnip



Siphon Gourd

provided by a local catering service provides healthy food items for sale. The refreshment area is a great place for folks to share information on growing plants, etc. Make sure you have an area near to the 'seeds to swap' table where folks can sit, talk about plants, etc and have a cup of tea.

***get the invitation out to everyone...***

Advertising is important. Make up a pretty poster that you spread all over your region. Make a one page press announcement and send it out to every radio show, paper, etc. If you want some sample ideas on posters, press releases, or information on various political aspects of seed conservation please contact the address below.

Display people can make or break the event. Make sure you bring integrity to the show. Invite small companies that sell open pollinated seeds, not hybrids. Many people will not have seeds to swap the first year so will need to buy seeds. At the end of the day, it is hoped that commercial outlets (seed companies, food services, etc) contribute 10% of the day's sales as a donation to the event. You will be amazed at the amount they had made during the day.

***free admission or by donation is best....***

Decide if you want to have an admission charge or a simple donation box at the door. Make a sign telling people what the money will go towards. Donations often go to various conservation projects. The setup committee can decide what to donate money to. Heritage Seed Program has received about \$8000 from Seedy Saturdays over the past few years, and USC Canada's Seeds of Diversity about \$2500. Money could also be used to set up a community heritage garden project or support a community garden project.

***heritage seeds, plants, animals....***

Seeds only or animals too? Heritage animal conservation was linked with seeds last year in Edmonton. Dr. Frank Robinson is a heritage chicken breed conservator; he brought 6 cages of old varieties of chickens for display. Contact Rare Breeds Canada (705) 653-0231 or fax (705) 653-0232 for names of people in your area working with old breeds of animals.

***kids' corner....***

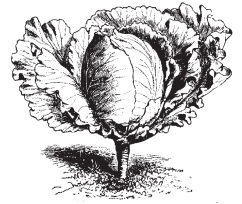
Some events have a "kids corner" where kids can make seed pictures or other activities.

**ACTION ALERT !  
Local Seed Company**

Track down local seed companies, visit their place of business and see what they have to offer.

**ACTION ALERT !  
Set Up a Seedy Saturday**

Visit [www.seeds.ca](http://www.seeds.ca) for a list of Seedy Saturdays happening in Canada. Set up a Seedy Saturday event in your community so others become aware of the value of the locally adapted seed. When you organize an event, send them your date and location so others can come to your event.



Large Bacalan Cabbage



White Spanish or Reading Onion



Adam's Early White Broccoli

## **Community Seed Banks**

### **Deciding what to Grow in your Community**



Chinese Cabbage

The number of growing days in your area are a consideration. The average number of frost free days are used as a guide in deciding what to plant but shouldn't limit your selection. There are many clever ways of extending the growing season; check out organic gardening books for ideas.

People talk about climate change; perhaps as the climate change, El Nino and other factors affect our weather we might be able to grow different kinds of crops in our gardens! It doesn't hurt to start experimenting now.

Your gardening skills and amount of time you have for gardening are important considerations. You may find that you have one evening free per week for gardening so the type of planting that is more intense and requires less weeding might suit your schedule. Maybe you need to find a 'garden partner' to share the work and rewards of gardening?

Land availability is a final consideration. Some people have backyard garden space but don't have time to garden so you could ask them if you could garden in their yard in exchange for some of the produce. Lawn is a waste of water; think about making your land productive next spring.

Smart communities are making land available for community gardens and space for farmers' markets. Really smart communities allocate space for community root cellars to store produce. They can also develop space for storing seed.

Once adapted to a specific site most varieties tend to produce healthier plants with less care by the gardener. Experiment with a couple of new varieties each year.

### **Think Like a Seed**

When a plant is happy and healthy it thrives in a garden. How can you predetermine a plant's potential happiness in your area? Become the plant for a minute. Think like the seed of that plant.

Think about the embryonic plant about to spring into life, questioning - is the soil warm enough for me? Will I get enough sunlight, water, air and nutrients? Or will my feet be wet, the earth cold, too much shade or too much sun and not enough nutrients? Will it be windy and will the air be pure or polluted? How will I adapt to the stress of the climate change? Will I like my neighbours? Will the gardener oversee us and we'll be too close to each other to grow properly? Will there be insects to pollinate my flowers? Will the season be long enough for me to produce viable seed children?

Makes you think doesn't it? Sounds a lot like the things we think about when we choose our living conditions. Plants and people ARE a lot alike after all!

Plants adapt to an array of growing conditions. When in doubt, experiment. But try and help the plant by giving it the most desirable growing conditions you can. The rewards will be worth it.

And remember to save the seeds!

Seed banks return greater dividends than any mutual fund in the world.

## Further reading on Seed Saving:

The most basic booklet around is sold by Seeds of Diversity Canada, for approximately \$8 CAD. '*How to Save Your Vegetable Seeds*'. Order through [www.seeds.ca](http://www.seeds.ca) or Seeds of Diversity Canada, P.O. Box 36, Station Q Toronto, Ontario, M4T 2L7, Canada. Phone (905) 623-0353.

Prices are approximate as you might well find many in used bookstores for much less, or much more if the Canadian dollar falls in value. Heritage plants are trendy so there are increasing numbers of books coming out on the subject. These are still classics.

*Edible Plants of the World*. J.P. Sturtevant, ed. U.P. Hendrick. 1972. Dover, \$20. Originally published in 1919 about the world's edible plants, origins and growing conditions.

*Heirloom Vegetable Gardening*. William Woys Weaver. 1997, Henry Holt & Co. \$62. 280 varieties of 37 vegetable crops.

*Heirloom Vegetables*. Sue Strickland. 1998. Gaia Books, London, \$22. Concise review of issues around biodiversity loss, catalogue of various heirloom varieties, list of seed suppliers, seed saving networks and further reading list. (if you only buy one book, buy this one and enjoy the gorgeous color photos!)

*Horizontal Resistance*. Frank Robinson. <http://www.idrc.ca/books/reports/1996/> (IDRC published this book).

*Shattering - food politics and the loss of genetic diversity*. 1990. Cary Fowler and Pat Mooney. University of Arizona Press, \$18. Required reading for anyone

concerned about corporate privatization of genetic resources.

*Taylor's Guide to Heirloom Vegetables*. 1996. Benjamin Watson. Houghton Mifflin Co., Boston, \$25. Catalogue of 500 varieties and good general information as are all Taylor Guides.

*The Heirloom Gardener*. Carolyn Jab. 1984. Sierra Club Books, San Francisco. \$24. A classic about seed saving techniques and issues.

*The Vegetable Garden*. Vilmorin-Andrieux. 1885 (reprinted 1981), Ten Speed Press. \$20. Details thousands of varieties available in Europe at the end of the last century. A classic.

## Web Sites

Seeds of Diversity Canada. Canada's heritage seed program. [www.seeds.ca](http://www.seeds.ca)

Seed Savers Exchange, USA. <http://www.seedsavers.org/>

<http://homepage.tinet.ie/~merlyn/seedsaving.html>

International Seed Saving Institute. <http://www.seedsave.org/issi/issi.html>

<http://www.wvu.edu/~agexten/hortcult/homegard/seedtips.htm>

(do a search on 'goggle' for 'seed saving')

Visit IcanGarden at <http://www.icangarden.com/>



## References for DIG:

Berg, Trygve. *Dynamic Management of Plant Genetic Resources*: Potential of Emerging Grass roots movements. Study No. 1. FAO, Italy. 1996.

Bubel, Nancy. *The New Seeds Starters Handbook*. Rodale Press. 1988.

Burr, Fearing. *Field and Garden Vegetables of America*. Boston. 1865. Reprinted The American Botanist Bookseller, Chillicothe, Illinois. 1988.

Ford-Lloyd, Brian and Michael Jackson. *Plant Genetic Resources: an introduction to their conservation and use*. Edward Arnold, London. 1986.

Huxley, Anthony. *Green Inheritance. The WWF Book of Plants*. Gaia Books. 1994.

(there are also two education pack with the same title)

Juma, Calestous. *The Gene Hunters. Biotechnology and the Scramble for Seeds*. African Center for Technology Studies. Research Series No. 1. Zed Books, London. 1989.

Koopowitz, Harold and Hilary Kaye. *Plant Extinction. A Global Crisis*. Stone Wall Press, Washington. 1984.

Nabhan, Gary Paul. *Enduring Seeds. Native American Agriculture and Wild Plant Conservation*. North Point Press, San Francisco. 1989.

Plucknett, Donald L. et al. *Gene Banks and the World's Food*. Princeton University Press. 1987.

Putter, A. *Safeguarding the genetic basis of Africa's traditional crops*. Proceedings of a CTA/IPGRI/KARI/UNEP Seminar, 5-9 October 1992,

Nairobi, Kenya. Technical Center for Agricultural and Rural Co-operations, International Plant Genetic Resources Institute, Italy. 1994.

Querol, Daniel. *Genetic Resources. Our Forgotten Treasure*. Technical and Socio-economic Approaches. Third World Network, Malaysia. 1988.

Rogers, Marc. *Saving Seeds. The Gardener's Guide to Growing and Storing Vegetable and Flower Seeds*. Storey Publications. 1990.

Shiva, Vanadana et al. *Biodiversity. Social & Ecological Perspectives*. Zed Books. 1991.

Sperling, Louise (ed). *Using Diversity. Enhancing and Maintaining Genetic Resources on Farm*. Proceedings of a workshop held 19-21 June 1995 New Delhi, India. International Development Research Center, Ottawa. 1996.

Srivastava, Jitendra et al. *Biodiversity and Agricultural Intensification*. Partners for Development and Conservation. Environmentally Sustainable Development Studies and Monographs Series No. 11. The World Bank, Washington. 19996.

Vavilov, N. I. *The Origin, Variation, Immunity and Breeding of Cultivated Crops*. Roland Press, New York. 1951. First Published MCMLI by Chronica Botanica, Vol. 13, No. 1/6, pages 1-366.



So many books,  
so little time....

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