

# Seeds and Seeding

## Regenerative Gardening:

- Gardens need deep, well-drained, rich soil for growing vegetables.
- Nature feeds and cares for soil.
- Minimize Tilling: don't disturb the microorganisms in the soil
- Don't Leave Bare Soil: use cover cropping and mulching
- Use compost or natural amendments, include animal manure
- Biodiversity and companion planting are very important
- Include Native Plants and encourage pollinators
- Save Seeds
- No Synthetic Fertilizers or pesticides
- Follow a crop rotation plan

## Seeds

- Seeds develop into a plant like the mother plant. Seeds contain enough nutrition to last for several weeks after germination, living thing.
- **Annual vs biennial vs perennial.** An annual is a plant that will complete its entire life cycle in one year. A biennial is a plant that will complete its entire life cycle in two years. A perennial is a plant that will complete its entire life cycle in at least three years if not more.
- Seeds can also be **Open Pollinated**: varieties produce offspring that closely resemble the parent or **Hybrid** varieties result from the controlled crossing of genetically distinct parents. They produce offspring very different than their parents.
- You cannot successfully save seed from hybrid plants; hybrids are often very useful in the garden.

## Choosing your seeds

- Choose a reliable source, must grow in your region, must be suitable for your growing skills
- Choose companies in your province or region, safe seed pledge, non-GMO
- The seed packet is an indispensable source of information on growing your seeds, use internet sources if more information is needed. Do not throw out your packet until the end of the season.

## Planting your seeds

- ❖ Needed: good seedling potting soil, disease free, clean planting container, water, air movement, lots of light
- ❖ Know your growing season, don't start your plants too soon before the stated planting outside time, onions 10-12 weeks, peppers/ tomato 8 weeks, most others 6 weeks, cucumber 4 weeks
- ❖ Fredericton is zone 4b, on the edge of 5a, our frost free period is mid-May until the 3<sup>rd</sup> week of September
- ❖ Pre-moisten your soil, fill container removing all air, don't over pack the soil.
- ❖ Plant 2-3 seeds in each individual pot, thinning to the strongest one, or plant seeds in rows 1" apart. Plant seeds no deeper than twice the diameter of the seed (1/4 -1/2 "), keep warm and

keep a few inches from LED, CFL or fluorescent light fixtures. Bright day light is ok but not enough for strong plants, give 16-18 hours of light / day, use a timer

❖ Fertilize after ~3 weeks, the seed has enough nutrients for 3 weeks. Seedlings tend to need a fertilizer high in phosphorous, like a 1-2-1 N-P-K ratio. A liquid or water-soluble fertilizer will be the easiest and quickest way for the seedlings to access nutrients. A complete fertilizer has all 3 major nutrients, (5 10 5 fertilizer is 5% nitrogen, 10 % phosphorus, 5% potassium by weight). A '1-2-1' ratio is often recommended for vegetables, which need plenty of phosphorous to set the fruit.

### **Transplanting your seedlings or potting up**

- Once the true leaves of your plant begin to grow, you'll have to move them to larger individual pots.
- Handle by the leaves, loosen the soil around the roots with a fork or small shovel, and transfer to a prepared pot having made a hole for the plant, for most plants, plant the seedling deeper than it was originally. Leave the first leaves just above the soil level.

### **Damping-off**

- A variety of fungal problems that lead to sudden seedling death.
- Prevention is the key, don't over water, have good air circulation,
- Cinnamon sprinkled on the surface of the soil may help

### **Hardening Off**

- 7-10 days before transplanting to the garden, plants need to gradually become used to the sun, wind, and temperature variations.
- Start in a sheltered shady spot, then give short periods of direct sun, gradually lengthening the time in full sun with full wind and temperature exposure.

### **Transplanting outside**

- transplant in the evening or on a cloudy day, firm soil around plants, water well adding 1 Tablespoon sugar to every gallon of water- the sugar is carbon which will help the roots and stop wilting.
- When transplanting all veg except cucumbers – add 1 Tablespoon of rolled oats to the bottom of the transplant hole – oats is a good fertilizer containing many trace elements. Break apart peat or paper pots to allow roots to spread and completely cover or remove the top edge of the pot. Many plants can and should be planted deeper than the pot they were in (tomatoes, cabbage family, cucumbers for example)

### **Sowing seeds directly in your garden**

Sow most types of vegetables directly in a garden. First make sure that the soil has dried out before you work it and be sure that the soil is warm enough for the seeds that you want to plant.

- Peas & greens germinate in soil as cool as 4°C, and plant them as soon as you can work the soil in spring.
- Squash and beans need warm. If your soil temperature is much below 65°F (18°C), the seeds are likely to rot in the ground before they sprout.

- Sow pole beans in a trench lined with newspaper especially if the area is likely to dry out – pole beans love moisture and the newspaper will hold moisture, until it decomposes.

### **War on weeds**

A “clean” weed-free plot before you start is the key to success with vegetables. Weed 1-2 weeks before planting, weed at planting time, then 1-2 weeks following (this catches weeds while they are just germinating, then as needed. Weeds compete for available nutrients and water. Once plants get big, the weeds often get shaded out. The organic approach is to pull out weeds and their roots as you dig. For hard to remove perennial weeds with spreading wiry or deep roots, cover the soil with card or doubled-up sheets of newspaper topped with a 2in (5cm) mulch of compost. This is sufficient to stop even persistent weeds regrowing. Do not use chemical herbicides unless it states they are safe for organic use.

### **Safe natural protection from crop damage**

- keep gardens clean and free of places where snails/ slugs can hide
- Guard maturing cucumbers and squash by using onion skins! Simply throw a big handful loosely across the top of each hill, also cover plants lightly while small to keep beetles from reaching the small plants
- Protect tomato crops by sowing dill and borage.
- Protect maturing corn with vegetable or olive oil or a pinch of cayenne pepper on the silks.
- Place discarded cabbage leaves and grapefruit rinds—or even old boards—throughout the garden in the evening. When day breaks, remove the occupants in the "slug domes,"
- pour soured milk over the young cabbages, etc. to keep the moths and the worms away
- Ants don't like: Lavender, Calendula, African marigold, Tansy, Pennyroyal, Chives. Yeast and sugar mixed with a little water is lethal to ants. Cayenne pepper – spread around plants you want to save from ants, also old coffee grounds. BUT Ants are aphid predators – so do not get rid of all of them...

### **DIY Natural Pesticides and Fungicides**

<b>Natural Insecticidal Soap spray</b> aphids, mites, white flies, thrips, and mealy bugs: 1 1/2 tablespoons of liquid soap(biodegradeable) 1 quart of water A couple drops of orange or lemon essential oil, mix and use to spray plant thoroughly	<b>Garlic, Peppers &amp; Onion Insecticide</b> 2 hot peppers    1 whole bulb of garlic 1 large onion    1/4 cup water Toss in the food processor and add water, blend until a mash is made. Cover mash with 1 gallon hot (not boiling) water and let stand 24 hours. Strain. Spray on roses, azaleas, vegetables to kill bug infestations. Bury mash in ground where bugs are heaviest. Good for thrips, aphids, grasshoppers, chewing and sucking insects.
<b>Baking Soda Spray</b> 1 tablespoon of baking soda 1/2 tablespoon of oil 2 quarts of warm water for treating plants with fungal diseases on leaves, mix and use immediately	<b>Japanese Beetles, borers, leafhoppers and slugs</b> Garlic also deters larger pest like deer and rabbit. -Natural Insecticidal Soap Spray (from recipe above) -1 tbsp chili powder (or fresh or dried hot peppers) -5 cloves of garlic, crushed Allow garlic and chili powder to steep overnight. Strain and pour into a spray bottle. Add Natural Insecticidal Soap Spray. Will keep for a couple weeks.