



NB Chg  
Gardening for change  
Let's Get Growing With  
Winter Warmups!



*Fredericton, New Brunswick, Canada, 2024*

# All about Seeds



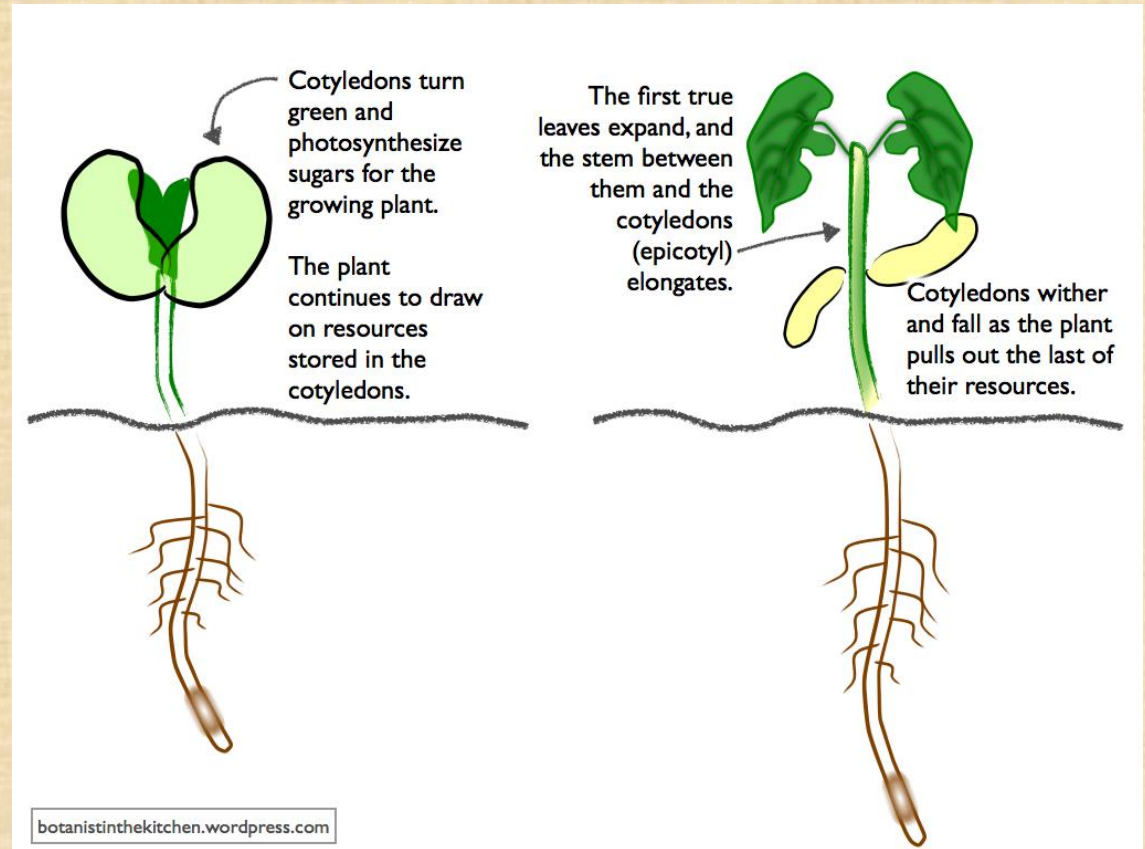


# Today's Content

- Delve into the nitty gritty of deciding what seed is best for me.
  - Background information
  - Determining your options (plant categories that affect seed choice)
  - Choosing seed source

# What are seeds

- **Seeds** are living, hibernating embryos. They have a life span and survive longest if kept cool, dark and dry.





# So many choices



Seeds can be:

- annual, biennial or perennial
- open pollinated or hybrid
- Tall, short, determinate, indeterminate

- *An annual plant* requires only one growing season to produce seed and complete its lifecycle. Examples include corn, beans, squash, tomatoes, and broccoli.





- *A biennial plant* requires 2 growing seasons to produce seed and complete its lifecycle. Examples include carrots, beets, chard, rutabaga, and cabbage. In the first season, a biennial grows into the plant that we normally eat. With the proper conditions the seeds are produced the second year.



- A *perennial plant* requires at least 2 or more growing seasons to produce seed and/or food. The plant will continue to survive and be productive for many seasons (Jerusalem artichokes, asparagus, many herbs, rhubarb)





# Open Pollinated

- Open pollinated seeds are seed varieties that produce seeds that produce offspring consistently similar to the parents



# Hybrid

- Hybrid plants are 2 completely separate varieties which are deliberately cross pollinated to create unique plants usually with superior performance than either parent. Saved seeds from these will either not grow, or certainly won't be like the parent plant.
- Hybrid usually are expensive for only a few seeds (F1, hybrid)
- Hybrid plants are not GMO plants



# What are heirloom seeds?

- Traditionally, heirloom seed varieties that have been saved generation to generation, they are usually at least 40-50 years old. Some have a history that can be traced for hundreds of years.
- They have been selected to be the best tasting or best producer.
- If produced locally they are well adapted to the local environment
- They are all open-pollinated. The seed can be reliably saved



# GMO in a nutshell

- GMO stands for "genetically modified organism."
- Genetic material has been altered in a way that does not occur naturally
- Involves the introduction of specific genes from one organism into another to achieve desired traits or characteristics.
- Resistance to the herbicide 'round up' is usually the type you may come across
- Lots of debate about the safety of gmo long term and of the effects of roundup residual in our food.



# Glyphosate aka Round-up

- Glyphosate is a non-selective herbicide (kills all plants it comes in contact with)
- Genetically modified plant can grow even if round up touches it.
- Residues remain in soil up to 6 months but doesn't kill plants that long
- Residues can be found even on non GMO foods: used to kill potato plants before harvest, many grains are also killed before harvest
- Glyphosate was developed by Monsanto

# Characteristics to consider with each crop





# Peas

- **Short:** 2-3 feet, some support helps keep off soil.
- **Tall:** need good support 5-6 feet, longer harvest season
- **Sugar snap:** pod looks full but juicy and fully edible
- **Snow pea:** harvest young and flat, fully edible
- **Shelling pea:** pod fibrous and not very edible.
- **Soup Peas:** harvested as seed and cooked
- **Color options:** purple, yellow, green, maybe more



**Peas add nitrogen to the soil**



# Beans

- **Bush:** no support, 2 feet, shorted harvest
- **Pole:** needs good support, 5-7+feet, harvest until frost
- **Fresh/ snap:** bred to eat fresh or cooked. Round, Flat Italian type, Filet very thin
- **Dry:** harvested as seed and cooked
- **Multipurpose:** used as fresh, as edamame, or dry
- **Colors:** yellow, purple, green, speckled flesh, seeds of a variety of color and patterns.



**Beans add nitrogen to the soil**







# Root vegetables

- **Radish:**

- Color: red, black, many variations
- Size: varies from small salad to much larger
- Daikon or winter varieties, planted late and harvested in fall
- Seed pods edible, bolt when seasons change cool to hot

- **Beet:**

- Several seeds stuck together, thin out extra plants.
- Poor germination mid to late summer from high soil temp
- Color: red, gold, white
- Shape: round, oblong
- Some bred for greens rather than root
- Sugar beet a separate variety with higher sweetness



radish



carrot



parsnip



beet





- **Carrot:**
  - Variety of colors
  - Shapes (round, finger, tapered, straight)
  - Use small round and finger for shallow soil
  - Eat thinnings, must be thinned or make seed tapes
- **Turnip:**
  - Variety of colors
  - Shapes: most round
  - Short season
- **Rutabaga:** long season, confused with turnip, most are white with purple shoulders but not all
- **Parsnip:** long season, best if over wintered, differences in seed are related to shoulder of root, very similar. Seed short lived 1-2 years max



# Lettuce

- Lettuce:
  - may self-seed
  - Leaf, buttercrunch, romaine, iceberg, oak leaf and more
  - The tighter the head, the more difficult it is to grow
  - Variation in colors, mainly a personal choice
- Harvest whole head, or remove outer leaves, once the weather gets hot, the plant will bolt and the leaves taste bitter.





# Spinach

- Plant early in spring,
- NOTE: Do not plant when soil warms in late summer, won't germinate.
- Most varieties only vary by how fast it bolts.
- A good alternative is perpetual spinach, a member of the beet/ swiss chard family





# Swiss Chard

- Seeds are similar to beet, remove any extra plants
- Varieties choices usually involve color of stem and leaf, choice is individual
- Perpetual spinach is a milder more spinach like variety of chard and doesn't bolt like spinach



# Broccoli

Broccoli does best in cooler conditions choices include

- **Color:** green and purple
- **Heading type:** one main head, main and side shoots, or shoots that are very small and numerous
- Some variation in size, and tolerance to heat or other variations in conditions.





# Kale

- **Leaf type:** curly, frilly, smooth, leathery
- **Shape:** long and thin, full and leafy
- **Color:** variations of green, white, and purple
- Hardy, full season, productive



<https://www.thespruce.com/types-of-kale-7182298>



# Cabbage

- Leaf / head type: tight heading, savoy or frilly leaves, Chinese/ long head, napa, etc.
- Color: green, red
- Season: Early, mid, late, designed to head up fast, head up in the heat, or long season with good storage ability.
- Choice best depending on use
- Brussel sprouts are similar but very long season needed, likes cold, varieties have different colors and length of season needed



<https://www.thespruceeats.com/varieties-of-cabbage-1808038>



# Pepper

Peppers have many options to choose from

- **Sweet or hot**
- **Shape** (bell, long, thin, flattened)
- **Taste:** jalapeño, chili, habanero all have distinct flavor
- Self supporting (12-18")
- Some variation in size, meaning some do better in containers





2023

Pepper Banana Hot Pepper

Pepper Jalapeno Red Pepper

Pepper Habanero Sweet Pepper

Pepper, bell      Bell Red Pepper

Pepper, bell      Nomad





# Tomato

There are multiple varieties of tomato to choose from

- **Determinate** (produce crop over a shorter time, much smaller, tomato cage support). **or indeterminate** (plants become several feet high, and wide, produce until frost, sturdy tall support)
- **Fruit size** (full size, cherry, salad, currant)
- **Fruit color** (varies)
- **Leaf type** (regular and potato)
- **Fruit uses** (paste, fresh, snack, cooked, sandwich, salad)





2023

- Tomato Latah d x
- Tomato Mount Roma d x
- Tomato Mystery Keeper d
- Tomato Pink Peach i
- Tomato Sweet 100 i
- Tomato Worry, potato leaf d
- Tomato Mountain Princess i
- Tomato Tribes tobique d
- Tomato Reisetomat i





# Eggplant and Okra

- Best to go for short season varieties as both need long hot seasons
- Eggplants come in various shapes and colors, choices based on use and preference
- Okra also have choices for size and color



Eggplant  
Eggplant

Nord  
Stellar Long Purple



# Annual Fruits

Plant care: Similar peppers, no support.

Varieties of ground cherries similar, differences in size, taste. Huckleberries are large and easily harvested in the fall but must be cooked, sunberries are tasty and sweet but difficult to harvest with very large plants



annual fruits  
annual fruits

huckleberry  
tall groundcherry



# Squash and Cucumber Family

- Make sure you know the size of your plant and fruit
- Small fruiting plants can grow on a trellis or tomato cage.
- **Cucumbers:** variations include length of fruit, seediness, bush or vine habit, also of interest there are nontraditional cucumbers shapes like cucumelon, lemon cucumber, crystal apple etc.
- **Summer squash:** zucchini (varying colors, bush plant some very large) other varieties have small fruits varying shapes and colors, eaten like zucchini
- **Winter squash** need lots of room to spread, there are some semi bush, harvest is at the end of season, most store very well
- **Melon:** access short season varieties, many options as to flavors, types, and sizes



# Cucumber/squash family



Cucumber  
Cucumber

Longfellow  
Parade



Squash (summer) Black Zucchini  
Squash (summer) Golden Marbre  
Scallopini



- Options:
  - color white, yellow, red
  - Shape: round, squat, long
  - Use: some are milder, some for fresh, some for storing
  - Be sure to buy local or Canadian, as we must grow onion designed to grow during long summer days
- Plant sets or 'baby onions
- Grow from seed, start early
  - Trim the tops of started seedlings to 2-3 inches helps develop stronger root
- Wildly changing weather may make onions sets go to seed early, break off seed head but these never do well once go to seed

# Onion





# Herbs

- Some best started indoors, dill and cilantro don't transplant that well and best started outside
- Seed is collected at the end of the season after flowering, some like parsley and sage, need 2 seasons
- For some plants like chives, thyme, mints, it is easiest to find a friend to give you a small piece of their plant.





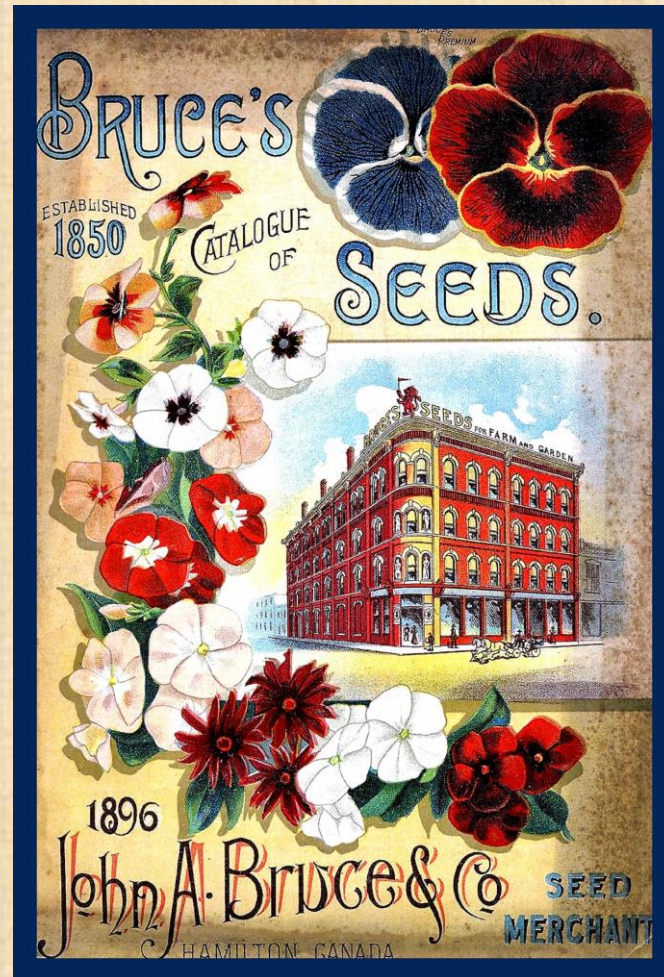
# Flowers

- The seed is collected after the flowers die and the seed pod forms, don't collect too early, but also not too late
- Necessary to attract pollinators and to help with insect control





# Where to source your seeds





# Seed Sources

- Your local seed library, friends and family
- Seed companies in your province or region
- Look for safe seed pledges, non GMO
- organic is best but not necessary
- if you want to save seed, make sure you know if your choice is hybrid or not
- Hybrid usually are expensive for only a few seeds (F1, hybrid)
- <https://seeds.ca/seedmap>
- <https://acornorganic.org/localseed>





## **New Brunswick**

\*Mapple Farm  
Seed Farm

\*Rainbow Seeds  
Seed Farm, Imported  
Seed

<https://acornorganic.org/localseed>



## **Nova Scotia**

\*Annapolis Seeds  
Seed Farm, Local Seed, Bulk Seed

\*Hope Seeds  
Seed Farm, Local Seed, Imported  
Seed, some Organic, Bulk Seed

Revival Seeds  
Seed Farm

\*The Incredible Seed Company  
Seed Farm, Local & imported seed,  
Bulk Seed

\*Twisted Brook Farm  
Seed Farm

\*Yonder Hill Farm  
Seed Farm, Bulk Seed



<https://mylittlegreengarden.com/how-to-read-a-seed-packet-for-beginners>

# Seed Packets

## Front

- Company packaging the seeds
- Name of the plant group and specific variety name
- Basic information about the plant the seeds will grow into
- Annual / Perennial/ Hybrid
- Heirloom / open pollinated
- Organic certified or GMO certification



<https://nowfoods.ca/quality-safety/seals-certifications/>





# Seed Packets Back

All basic information on how to grow the seed into an adult plant including all or most of: Propagation, transplanting, . Planting Conditions, Soil and water, Planting Depth, in row spacing, Germination temperature, Days to Germination, germination testing or a use before date, days to maturity, sun requirements

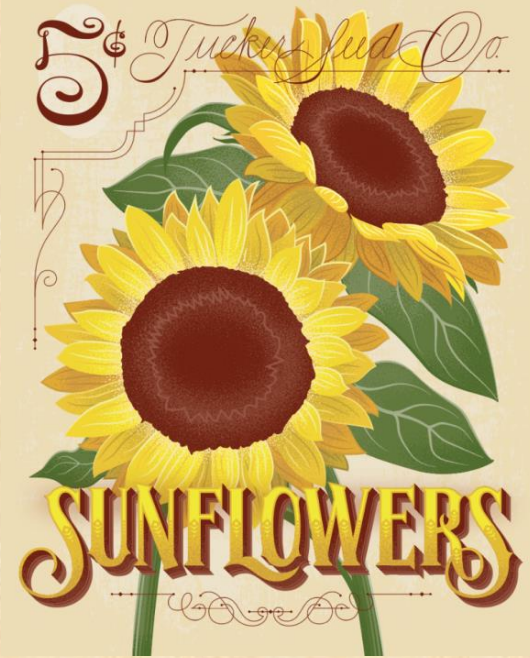
<https://mylittlegreengarden.com/how-to-read-a-seed-packet-for-beginners/>





# Why read the catalogue

- ✓ There is usually a statement about non- GMO in their seeds.
- ✓ The history or ‘story’ behind the variety is often available.
- ✓ The most important information is to see where the seeds are produced, the best growers identify the farm it is produced on, ensuring locally adapted.
- ✓ Seed germination is tested and should be available, in years where germination is low, usually extra seed is supplied.





# Take away Lessons

- Know what you are planting and how it grows
- Know how it makes seeds
- Pre planning save you lots of heart ache and work



# References

- Farmers Almanac <https://www.almanac.com/how-save-vegetable-seeds>
- Seeds of diversity <https://seeds.ca>
- Seed Change Canada
- <https://seedsavers.org/learn/seed-saving/>
- Personal knowledge
- Any pictures are mine, in the public domain and free, or are referenced below the picture.



# Home made seed tapes



- Newspaper: cut into strips
- Flour & water paste to attach seeds to newspaper
- Toilet paper: cut part full roll into half. Spray to dampen, place seeds down center, fold edges over seeds, spray lightly again and let dry
- Store once dry





