

Seed Saving and Vegetable Breeding for Everyone



Aaron Parker
207-653-2065
edgewoodlandscapes@gmail.com
www.edgewood-nursery.com



Why save seeds?

More control over what you grow

More cultivars

Preserve rare cultivars

Economics

Food security

Act of resistance

More connection to plants

Breed your own varieties

Landraces

Annual: a plant that grows from a seed, blooms, makes a new seed and dies in one year.



Broccoli



Lettuce



Peas



Most Beans



Squash



Watermelon



Corn

As well as many

other

familiar crops

Biennial: A plant that grows from a seed and produces leaves and roots in year one. In year two it produces seeds and dies.



Cabbage



Beets



Most Onions



Carrots



Parsley



Hollyhocks



Sweet William

As well as many other

familiar crops

Perennial: A plant that lives 3 or more years.

There are two main types:

Herbaceous: Plants that die back to the base or roots in winter.

Woody: Plants that grow permanent stems, trees, shrubs and some vines.

Examples of Herbaceous Perennials:



Rhubarb



Asparagus



Daylilly



Hosta

Examples of Woody Perennials:



Apple



Maple



Rhododendron



Pine

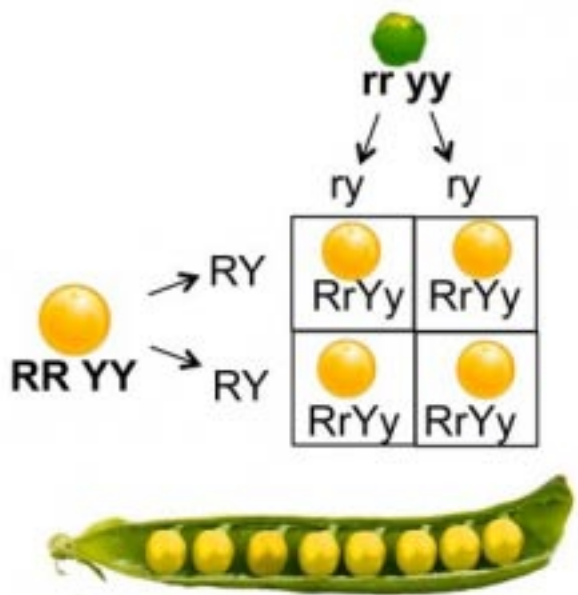
Open Pollinated (OP, Heirloom, Stable Breeding)

These terms describe a variety that "comes true" meaning that the seedlings closely resemble their parents. This is achieved by several generations of selection.

Hybrid (F1)

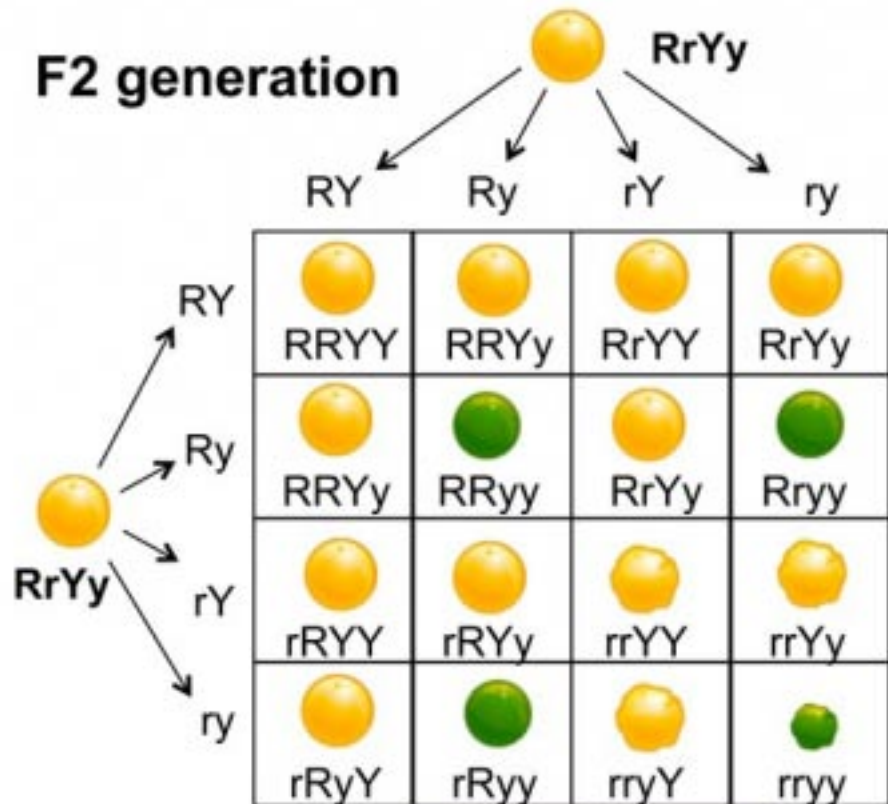
A F1 Hybrid is a first generation cross between two separate varieties. While the plants grown from F1 seeds are very uniform, if seeds are saved from those plants (these are called F2 seeds) most of the offspring will not closely resemble the parents.

F1 generation



All smooth, yellow
The recessive alleles are hidden

F2 generation



9 smooth, yellow
3 smooth, green
3 wrinkled, green
1 wrinkled, yellow

Species

Crop

Landrace

Variety

**Clonal
Cultivar**

Brassica oleracea

Broccoli

'Calabrese'



Monecious plants have separate male and female flowers on the same plant



**Male and Female
Corn Flowers**



**Female and Male
Squash Flowers**

Dioecious plants have male and female flowers on separate plants.



**Male and Female
Spinach Plants**

**It is most common in
woody plants like:
Hollies
Ginkgo
Mulberries
Persimmons
Kiwis
Date Palm**

Self-Pollinated: These plants typically pollinate themselves, meaning pollen is moved from the male to female parts of a single flower.

Some examples include:



Tomatoes



Lettuce



Peas



Beans

Outcrossers: these plants are typically pollinated by a separate plant and are easily crossed with any variety of the same species.

Many outcrossers have some mechanism to prevent self-pollination, such as shedding pollen and accepting pollen at different times, or Self-incompatibility, where pollen that is too genetically similar will not be accepted.

If you want to grow more than one variety of a single species and save true seeds, you need to isolate each variety.

You have many options to choose from:

By time: grow only one variety per species per year, or grow one in the spring and one in summer.

By distance: grow one at your house and one at a friend's

By Barrier: use row cover or screen cages to isolate varieties, but make sure they still get pollinated.

Population Size: When saving seed from a variety it is important to have more than a few of that type. Too small a breeding population results in genetic weakness, known as inbreeding depression.

The minimum population is different by species.

Outcrossers need larger populations.

Larger populations are better in general.

Maintain larger populations if you are preserving a rare variety or growing seeds for sale or public use.

Wet Process: for tomatoes, cucumbers and other seeds from wet fruit.

1. Collect ripe fruit, over ripe fruit is fine too.

2. Scoop out seeds if possible. With small berries it may not be worth the time, in this case squish the fruit.

3. Put seeds or crushed fruit in a jar or other container with twice as much water as seeds.

4. Cover with cloth or mesh to keep out flies.

5. Check and stir daily.

6. After 5-10 days seeds should have sunk to the bottom and separated from the pulp.

7. Wash away everything that isn't seeds by filling jar with water, swirling it around and carefully pouring off the water.

8. Drain seeds and dry on a screen or on paper. If seeds need stratification to germinate, do not dry, store damp in fridge.

9. Store seeds in a cool / dry place

Dry Process: For Peas, Beans, Grains and other seeds that dry on the plant.

1. Allow seeds to dry on plant when possible, but not to the point that they fall on the ground or blow away.

2. Collect seeds on a dry day.

3. Store in open paper bags or on screen until fully dry.

4. Tresh. Use hands, feet or box thresher to remove seeds from pods or seed heads.

5. Using bowls, wind, a fan, screens etc. separate the seeds from the chaff (everything else)

6. Store seeds in a cool dry place.

7. For long term storage, get seeds very dry by sealing in a container with silica gel for a few days, then store in a air tight container in the freezer.