CLASS OUTLINES

January

January 18, 2013 – Class 3 “Intro to Seed Saving”

Goal: The goal of this class is to teach farmers some basic plant reproduction biology, the difference between annual/biennial/perennial, and open pollination versus heirloom. The vehicle for this lesson will be the farmers’ desire to learn about seed saving. A number of the farmers have tried saving seeds in previous years with a spectrum of success. This lesson will bring to light the three most significant elements to think about before attempting seed saving. This lesson will not delve into finer details of seed saving such as sanitation, disease spread, labeling, storage, patented seeds, etc.

* What is an heirloom or open-pollinated?
	+ Open-pollinated seed produce plants just like the parent plant, which resemble their grandparents and great-grandparents, and great-great-grandparents. Open-pollinated crops have been developed from wild edible plants through generations of selection by nature and farmers.
		- You can save these seeds (if done appropriately) and get the same variety next year
		- These tend to be very old varieties of plants
		- Many vegetables that we grow are heirlooms, but your customers tend to only know about heirloom tomatoes
		- Fedco catalogue has mostly heirloom varieties of all vegetables
* What is a hybrid?
	+ Hybrids are seeds from two varieties of parent-plants that are genetically different, but of the same species. They do not produce plants like themselves, instead, they produce new combinations. If you save the seeds, the new plants will not look like their parents. Sometimes, the seed will be sterile, similar to when a horse mates with a donkey. The next-generation mules are sterile.
	+ People are more like hybrids.
		- When two people have a baby, the baby looks a little bit like both parents, but not exactly like either of them.
		- When that baby grows up and has a baby, that baby will look a little bit like all 4 grandparents, and like his/her parents, but not exactly like any of them.
	+ Hybrids are literally owned by the companies or breeders who made them. There is a HUGE industry around plant breeding. Scientists are paid a lot of money and spend many years doing experiments to make the perfect purple carrot or the roundest/reddest tomato that is exactly the size of an egg, or the brightest colored rainbow chard. That is why hybrid seeds cost more.
		- Example: sungold tomatoes
	+ Show pictorially how two very different looking tomatoes can be crossed to get something quite different.
		- If you save those seeds and plant them, who knows what crazy combinations you will get
		- If you want the same tomato every time, you have to cross the same parents every single time.
	+ Some hybrids have less obvious differences if you save seeds – example – cilantro or parsley
	+ Some have huge differences – example squash
* Flower physiology
	+ Petals are a fancy dress to attract pollinators and protect the reproductive parts of the plant
	+ Pistil is the female part of the plant – it take pollen from the male part and takes the pollen down into the ovule where it produces seed.
	+ Stamen is the male part of the plant and it produces pollen
* Some plants have male and female parts in same flower. These are self-pollinating.
	+ Example – lily
* Other plants have flowers that are either male or female – these are cross-pollinated
	+ Flower picture example
		- The flowers look different
	+ Cucurbit family are an excellent and obvious example
		- Different views of male versus female flower.
			* Only female flower makes fruit/seeds
	+ Cross-pollinated plants need help to reproduce
		- Insects and wind are most common methods
		- Bee example
		- Wind example
		- Can be hard to save seeds successfully
			* Squash example
			* Tell story of how plant breeders breed squash
* Annuals
	+ One season
	+ Easiest to save seeds
* Biennial –
	+ Need two seasons before setting seed
	+ Need a lot of land and complicated field management
	+ Don’t really make sense for us to save.
		- Huge seed saving farms do the work for us
* Perennial
	+ Often very easy seeds to save, but don’t need to because these plants come back year after year.
* Pictures of seed saving that some of the farmers already do – garlic, cilantro
* Recap of what to think about when seed saving
	+ Annual/biennial/perennial
	+ Heirloom/hybrid
	+ Self- or cross-pollinated

Activity following slide show:

As a class, let’s use what we just learned to make a list of the crops that are the most reasonable for us to learn how to save seeds well. Everyone picks a vegetable on the list and tells the class why they think it is a good plant for saving seeds.

If there is time, we also make a list of plants that aren’t good for us to save seeds on a small scale. Everyone picks a vegetable on the list and tells the class why they think it is not a reasonable plant for us to seed save.