Seeding time: Notes from the farm

by Terra Brockman in the May 2, 2012 issue

Lettuce, fennel and parsley seedlings. Photo courtesy Terra Brockman.

Seeds are coming in the mail each day—seemingly blown in on the strong spring winds. Sometimes a large box arrives, usually from Fedco or Johnny's Selected Seeds, with scores of seed packets for my brother's vegetable farm. Sometimes a manilla envelope arrives with only a few packages from a specialized seed company such as High Mowing Seeds, Kitazawa Seed Company or Seeds of Italy.

The Italian seed packets proudly proclaim their parentage: Franchi Sementi, the oldest family-owned seed company in Italy, founded in 1783. The art on the big bright packets shows what the seeds will become: a new variety of San Marzano-style paste tomatoes, big fat storage carrots and candy-striped Chioggia beets.

The tomato seeds are small, slightly fuzzy, papery flakes, as insubstantial as confetti. These are the seeds you slurp down by the hundreds when you eat a big ripe tomato. But now each one is about to be launched on a journey that will result, if all goes well, in a sturdy plant whose roots go four to six feet down, and whose

stems climb just as high skyward, producing from 20 to 100 pounds of tomatoes over the season.

Carrot seeds are even tinier than tomato seeds. They come from the flower that a carrot makes if you let it grow another year. That next year, it will use the energy stored in the root to sent up tall stalks with a bright white umbrella of a flower made of many small florets. If you've ever seen Queen Anne's lace during the winter, after the flower becomes a seed head, you'll know what carrot seeds look like—small silver slivers that weigh almost nothing.

Beet seeds are one of the larger vegetable seeds, once you eliminate the real heavyweights—bean, pea and corn seeds. And they are perhaps the strangest of all the seeds we plant—gnarly, sharply angular and irregular, looking like nothing so much as miniature asteroids. But when they hit the moist earth the several seeds clumped inside (each asteroidal seed is technically a fruit, like a tiny dried-up apple with multiple seeds) begin to soften. Then each tiny embryo, in an arrested state of development while the seed was dry, begins to grow, drawing its nutrients from the built-in food supply called the endosperm, a combination of proteins, carbohydrates and fats.

As seed packets arrive each day, my brother Henry organizes them in a big cabinet according to what he will plant where and when. Given the different rates at which various vegetables germinate and grow, and their climate preferences, "the readiness is all." Each seed must be planted at just the right time in the hoophouses or in the fields to ensure that it grows well and provides our market customers with nutritious foods.

Henry spent most of February getting the hoophouses ready, cleaning them out and sealing them against the still cold air. Now he is at his station, bending over the workbench, germination trays in front of him, seed packets at the ready.

It seems that there should be some sort of fanfare as the first seeds of a new season go into the soil. But this sacred mundane act generally happens in silence. Henry places the 72-hole germination trays over the heat tape on his worktable and fills them with a mixture of black dirt and Perlite up to about one-fourth inch from the top. He doesn't need compost in the mix, because the seeds contain within them all the nutrients and energy they need to germinate, the same way an egg contains within it everything a chick needs to develop, hatch and then live for three days

after hatching with no need for food or water. By the time the seedlings need to start getting nutrients from the soil, Henry will have transplanted them into compost-rich soil blocks where they will grow until it’s warm and dry enough to put them out in the field.

Once the germination trays are ready, Henry thickly sows his first crops. He generally sows four to six times as many seeds as he wants plants. This provides a margin of error against poor germination and other random disasters, like mice getting in at night and digging up a high-protein snack. Also, this gives Henry the opportunity to select the strongest and the fittest seedlings to block out—a little unnatural selection.

As he works, Henry sketches out the six-hole-by-12-hole rectangle of each germination tray on a page of his pocket-size loose-leaf notebook. He records each variety as he plants it so that he can keep track all the way from seeding through blocking through transplanting to harvest and know that that particular lettuce is, for example, Batavian Crisp.

After the seeds have been sown in the tray, Henry covers them with an eighth of an inch of a light soil mix. He firms it up on top of the seeds so that they won’t float away when he waters them, which he does with a fine misting spray. A good wetting down now gives the seeds enough moisture to germinate. Any further watering during the germination stage is a bad idea because it tends to cause the dreaded “damping-off” disease, where apparently thriving seedlings suddenly slump over and perish in a sort of sudden seedling death syndrome.

Henry plants eggplant, two trays of cabbages, two of broccoli, early and late bearing, ten trays of some 20 varieties of lettuce, three trays of radicchio, one of dandelion greens, three of fennel, six of basil and one of herbs including epazote, papalo, lemongrass, saltwort and shiso. Then there are 12 trays of peppers, and the first sowing of six trays of tomatoes.

After each day of sowing, he stacks the trays so that the vegetables that need the hottest soil temperatures are at the bottom of the stack near the heat tape, and the ones that like cooler temperatures are at the top. Tomatoes, eggplants and peppers prefer soil temperatures around 90 degrees and will germinate in three to five days. If the soil temperature were 55 degrees, as it will be outdoors in another month or so, it would take tomatoes ten days to germinate. Broccoli prefers soil around 80

degrees to germinate, and lettuce likes soil in the 70s. Lettuce germination will be inhibited if soil temperature is above 70, which makes it hard for Henry to get the fall lettuce crops going when he tries to plant them outdoors in mid-August.

Once the trays are planted, covered, tamped down, watered and stacked on the heat tape, Henry covers the whole stack, including the heat tape at the bottom, with a layer of greenhouse plastic. Even though night temperatures can still fall well below freezing, the germinating seeds stay nice and toasty in their mini greenhouse-within-a-greenhouse formed by the heat tape and the stack of trays blanketed in plastic.

During this cold part of spring, Henry has everything planted in very high density. Like a magician pulling rabbits out of a hat, he will soon pull thousands of plants from the seeds germinating on this ten-by-three-foot bench. By the end of the season, thousands of pounds of vegetables will have come from those tiny seeds.