

Field Production of Leafy Greens/Management of Insect Pests

By Matthew Gifford from Rosaly's Garden

Rt 123 Peterborough NH 03458

603-924-7774 matthewgifford78@gmail.com

At Rosaly's Garden we harvest a variety of leafy greens from April through mid December. We have six high tunnels that are used for bedding plant and tomato production during the summer, that we use for greens production in the spring and fall to extend our season and supplement our income. Nearly 50% of the greens that we produce are marketed wholesale which is in contrast to the rest of our produce of which nearly 90% is marketed directly to our customers through our farmstand. The greens that we produce have become an essential piece of our wholesale marketing, when our greens are suffering so are our sales.

Our field production of greens consists of 19 weekly plantings of head lettuce and our baby greens mix, from mid April (as soon as the soil is workable) through August. We also do an early and late planting of Swiss chard, as well as two later fall brassica plantings that are transplanted to the field in early and mid July. The specific varieties and approximate quantities grown are as follows:

Swiss Chard	Kale	Lettuce	Baby Greens
Improved	Toscano	Green star	Garrison
Rainbow mix	Winterbor	New red fire	Sulu
(2 plantings of 600 plants)	Redbor (2 plantings of 600 plants)	Adriana	Defender
		Red cross	Annapolis
		Panisse	Green star
		Paradai	Spock
		Claremont	Arugula
		Green forest	Mizuna
		(1,500 plants per week)	Red giant
			Tatsoi
			(1,400 ft sq/week)

Pre-Plant Considerations

Site selection is essential to a successful planting. As with many crops leafy greens prefer a light well drained soil. Planting in a heavy wet soil can lead to a variety of other problems. The selection of disease resistant varieties such as downy mildew resistant varieties of lettuces is also very important. We only plant resistant varieties for both our head and baby lettuce types. All of our fertility needs are addressed pre-plant using a broadcast spreader. For all of our greens we use a combination of dried chicken manure and potassium sulfate, The rates are determined by annual soil testing.

Planting and Irrigation

Our baby greens are all direct seeded on a fine seedbed using the Johnny's six-row seeder and irrigated with a row of small overhead sprinklers, for one hour twice a day during germination only. All of the transplanted crops are set out using a water wheel transplanter, which is often the only irrigation required due to the good water holding capacity of our soil. The water wheel transplanter also allows us to apply certain insect controls at the time of planting, such as beneficial nematodes to help control Cabbage maggot and Flea beetle larvae.

Pests and Controls

As an organic grower cultural controls are always our first line of defense against any problems. The importance of simple things like crop rotation, controlling weed hosts and the use of floating row covers cannot be understated. Manipulating the timing of plantings can also be a useful tool. For example we no longer plant any spring brassicas because of unmanageable populations of flea beetles for several years, which resulted in unmarketable kale. This simple change has resulted in a much smaller population throughout the entire growing season.

The pests of greens are specific to the type of plant. Swiss chard has relatively few insect pests. I usually only have problems with leafminer, which spinosad is labeled for, but I find to be unnecessary because in most circumstances simply removing damaged leaves from the field gives adequate control.

In most years the lettuces have had few insect pests, mostly caterpillars such as corn earworm later in the summer. The caterpillars are easily controlled with a spray of Bt. This past season however we experienced for the first time severe damage from either crickets or grasshoppers. Over the span of one weekend we lost approximately 4,000 heads of lettuce, from then on a weekly Pyganic application was made which seemed to give good control. Grasshoppers also became an issue on some of our brassicas (broccoli in particular) where again Pyganic seemed to work well.

The brassicas are where we have had the most trouble over the years with insect pests. The two most economically damaging pests for us have been the Crucifer flea beetle and the Imported cabbageworm. Although the cabbageworm is easily controlled with Bt I prefer to apply Entrust as a more expensive alternative because I feel it has some efficacy on the flea beetle as well as excellent cabbageworm control. The other weapon against flea beetles is a rotating spray of Pyganic in between each Entrust application, which as mentioned also helps to control the grasshoppers. These sprays in conjunction with our other controls i.e. weed control, nematodes and only planting late brassicas has produced an outstanding crop now three years running.