

Field Notes:

August 1, 2001

Fertilizing cool season vegetables:

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When gardeners plant cool season vegetables like turnips, mustard, kale, lettuce, and others, they often fail to address the special soil fertility needs of these crops. It seems that many people assume that the practices that were followed for summer crops will suffice for supplying the needs of these plants. A current soil test should be the basis for applying lime and fertilizer, but few take the time to perform this task.

Many people have followed this line of thought for so long that they have never really seen winter crops grow at their full potential, and have seldom enjoyed the quality these crops can achieve with proper fertilization. Every time we hear someone say, "my greens are 'tough' or 'bitter', this is evidence that good fertilization has not been done. These plants are meant to grow under what might be termed "luxuriant" soil nutrient levels.

For years I have watched a close friend who grows greens for commercial sale, and he uses levels of nutrients that many would consider excessive to produce the quality of produce that essentially sells itself. Farming near a large city, he sells essentially everything he can grow to local grocers and many loyal individual customers.

As with most crops, soil pH is the first consideration; pH should be near 7.0. This not only allows plants to utilize fertilizers properly, it also allows them to develop extensive root systems, and it supplies the large quantities of calcium these crops demand. Because of this, the area where you plant these crops should receive around 75 pounds of agricultural lime per thousand square feet. Either form of agricultural lime will do a good job, however I prefer dolomitic lime over calcitic lime since it provides more magnesium, a key element in photosynthesis. Good pH level also ties up some of the soil elements like aluminum and manganese, which are toxic to root growth, leading to poor growth.

Ideally, lime should be applied prior to planting, and it should be well mixed with the soil, however it can be applied after planting or even after plants have emerged. Benefits will be somewhat decreased by these later applications, but the effect will be much better than leaving off lime altogether.

As a general recommendation, broadcast 4 to 5 pounds of calcium nitrate, and 4 to 5 pounds of a high quality mixed fertilizer such as 5-20-20 per thousand square feet at or soon after planting. This type of mixed fertilizer contains the necessary micronutrients like boron and zinc. Apply another 2 to 3 pounds of calcium nitrate when plants are 4 to 5 inches high. When greens are cut, new growth will be produced and a second crop can be harvested 2 to 3 weeks later. Apply an additional 2 to 3 pounds of calcium nitrate immediately after the first cutting. All of these rates are for one thousand square feet.

When using fertilizer rates this high it is essential to know the exact size of the plot because applying these rates to smaller plots may cause injury, and using these rates on larger plots may not give good results. Don't guess; do the math and be sure. In case you have forgotten, the area in square feet is found by multiplying the length in feet by the width in feet.

Perhaps the biggest problem in growing these and other crops is that of water. Normally we get adequate rain in late fall and winter to produce good results, however when rains don't arrive you may need to irrigate. This is usually a problem for home gardeners, but with the small size of most greens plots this should be feasible. Simply saturate the soil once a week, preferably with a sprinkler, and you should have great greens. Make sure water does not stand on the plot for long periods since this will cause damage to the growing plants. Because of this a plot with a little slope is normally the best.

These recommendations are primarily for greens, however the principles will apply to other cool season crops too. Give your plants what they need and they will reward you with a bountiful harvest.

For the last two weeks I have written about things other than agriculture because of my deep concern over the events of September 11th, however I must return to subjects that are connected to my duties as an Extension Agent. My concerns have not diminished, and I hope yours have not either. Our greatest challenge is to go forward with our everyday lives without becoming complacent as our enemies expect. As never before, the future of our nation is in the hands of common people like us. Pray for our nation and for our leaders.