HOME & GARDEN

Plant nutrition, soil fertility

By PAT LEUCHTMAN
Recorder Columnist

Last Saturday I attended the third annual Small Farms Conference at the Franklin County Technical School, and I spent the day happily collecting notes about the growing of Christmas trees, herbs and sheep.

At one workshop, given by Dr. Lynn Marcus Wyner from the University of Massachusetts, visions of gardens past danced before my eyes as she spoke on plant nutrition.

Dr. Wyner stressed that although plant nutrition and soil fertility were integrally related, they were somewhat different. A soil may have all the necessary nutrients, but a plant may still be malnourished if they are not in a form that is usable to the plant or if some other circumstance, like the weather, interferes.

First Dr. Wyner spoke about the six macronutrients, those elements that are needed in greatest quantity for the healthy development of your garden plants. The first three — nitrogen, phosphorous and potassium — are commonly available in commercial fertilizers, and the identifying numbers like 5-10-5 refer to the ratio in which they are present.

Calcium, magnesium and sulphur are the final three macronutrients. Calcium is regularly supplied to the garden when it is limed.

Dr. Wyner went down a list of common symptoms of deficiencies, and it was often like a walk through my garden as she showed slides that clearly and graphically illustrated the problems.

A *nitrogen* deficiency will result in a general yellowing or fading throughout the entire leaf and can also result in a stunting of the plant. If there is sufficient nitrogen early and the deficiency develops later on, the lower or older leaves will yellow and finally die and fall off because the plant will use the nitrogen where it is most urgently needed and that is in the formation of a seed.

A *phosphorous* deficiency will cause a red or purplish cast to the underside of leaves. When the slide of phosphorous deficient tomatoes and corn flashed on the screen, I recognized plants that might have come from my own garden. Dr. Wyner explained that sometimes there is ample phosphorous in the soil, but it isn't always available to the plant. For instance, she said that cold weather early in the season could inhibit the uptake of phosphorous and damage the plant.

A *potassium* deficiency will cause small brown specks to appear along the margins of the leaf, and this will eventually turn into a marginal "scorching" before taking over the whole leaf. I remembered that my tomatoes had shown some signs of this specking.

BETWEEN THE ROWS

A *calcium* deficiency affects plants like lettuce and cabbage by "burning" the edges of the leaves. Some of my lettuce showed this symptom, and my zinnias were severely affected. The degree to which a plant is damaged may be a sign as to how important that element is to that particular plant.

Blossom end rot of tomatoes and peppers is also caused by calcium deficiency. Again, the calcium may be present but not available because of drought or because high humidity in the air decreases the transpirational flow within the plant that would bring the nutrients to the main parts of the plant.

In addition to these major nutrients, plants also need a battery of trace elements, which are so called because they are needed and found in such minute quantity in the soil. They are zinc, iron, copper, cloride, boron, molybdenum and manganese. Though only tiny amounts are needed they must be present to promote healthy plant development.

Dr. Wyner said that many Massachusetts soils suffered from a boron deficiency. Plants with an insufficient supply of boron will show a blackening, twisting and curling of the foliage. Root crops like beets, sweet potatoes and turnips will develop brown water-soaked areas and a general corkiness on the surface of the root.

I know my soil has a slight boron deficiency because my broccoli and cauliflower consistently have hollow spots in the center, and this is another symptom.

I must confess that while I did not recognize all the manifestations of my soil's shortcomings before Dr. Wyner's lectures and slides, I was aware of the problems because I sent a soil sample off to the Waltham experiment station for the super-duper test they run there. The results of that test make me launch a plan of vigorous soil improvement that will keep me busy for years. The encouraging thing is that even with poor soil, I am producing respectable harvests of good vegetables. As I improve the soil, these harvests will become even better and my plants stronger and less apt to succumb to insects and disease.

If you would be interested in a complete soil test done for your garden, a sample envelope can be purchased from the Extension Service at the courthouse for $3. The Waltham experiment station will send you the results and will include recommendations on fertilizing.

I will discuss an organic fertilization program in the near future.

Recorder Photo by Chuck Blake

Multitudinous cactus flowers

This 5-year-old orchid cactus is now in bloom, with over 100 red-orange buds. According to the owner, it is easy and satisfying to grow.

GARDEN CALENDAR

The following information is provided by the Franklin County Extension Service.

NOW IS THE TIME TO:

- Plant dormant nursery stock as soon as possible. Don't fertilize new trees at time of planting.
- Rake your lawn — carefully — if it's not soggy.
- Apply dormant oil sprays to fruit trees when it will dry rapidly and night temperatures do not drop below 40 degrees. Sprays are best used before one-half inch of green tissue protrudes from buds.
- Prune maple, dogwood and birch after they have leafed out. Pruning now results in the "bleeding" of sap.
- Rake away and dispose of old Iris foliage to help eliminate Iris borers before they hatch. Borers overwinter in the [illegible] ing, when Iris leaves are 5 or 6 inches high, the eggs hatch and young caterpillars enter the leaves a few inches above the ground.
- Note that mole activity in lawns has been recently reported. It is too early for beetle grubs to be in the upper root zone, so they are probably feeding on other food sources such as earthworms and other larvae. It is too early to apply grub proofing chemicals, and mole control now is very difficult. Traps, cartridges and chemical pel[illegible]

On the house

By ANDY LANG
Associated Press

What's new on the market:

ROTARY STRIPPER FOR SURFACE FINISHES. The manufacturer's claim — That the flat wire design of this p[illegible] enables the user to strip paint, varnish, rust, etc. from virtually any surface. That there is less mess and easier cleanup than with conventional liquid strippers. That it does not gouge wood or other surfaces. That you can replace the stripper's wires and select the right type and size of wires for each job. That wire breakage is virtually eliminated by the use of tempered spring steel and valve spring steel wire, and that it is especially good for the preparation [illegible] painting.

SOLAR HEAT CONDITIONER. Manufacturer's claim — That this is a window unit which utilizes an electric fan and an exterior collector, a kind of solar heating device on a small scale. That it will heat one room as large as 200 square feet, up to 72 degrees Fahrenheit, permitting the rest of the house to be controlled by a thermostat set at 60. That it is easy to install, weighs 47 pounds and is about the size of a room air conditioner, and that the unit utilizes a solar panel that hangs outside the window, collecting sunlight which is