

This is the time of year we undercut some of our tree varieties. We accomplish this by placing a 24" U-blade on our tree digger. The digger straddles the rows and the U-blade is pulled through the root system. Undercutting is done on 2 year whip sized trees before their third growing season begins.

The decision to undercut a variety depends on what we are trying to accomplish. *Quercus* and *Gleditsia* naturally have very coarse root systems, so undercutting promotes a more fibrous roots. *Crataegus* undercut have a better survival rate.

Acer Autumn Blaze and *Tilia* spp. are vigorous growers, so undercutting reduces the size of the head. Third year *Pyrus* would normally all be 1/4" or 1" caliper and require extra pruning. The undercut pears are mostly 6'Br with uniform branching and extra fibrous roots.

We continue to experiment undercutting varieties every year. Often we find there are advantages. Is there a downside to this? Yes. The additional fibrous roots can double the harvest time in wet soil. But if it produces a better tree, we'll be happy to do it. Have a great spring.



Green Growing

Soil born fungal diseases are a problem for all growers. Few of us escape at least one of the nasty buggers: *Verticillium*, *Phytophthora*, *Pythium*, *Rhizoctonia*, *Fusarium* and others.

We recently attended a talk by Dr. Robert Linderman of Oregon State University. He discussed Biofumigation, Compost and Mycorrhizae and their use to promote healthier plants.

Biofumigation refers to the use of certain organic material such as Soybean meal, and the use of green manure of certain varieties of the Brassica family. The result of the natural breakdown of these materials in soil is the release of volatile gases which trigger fungal sclerotia to germinate and grow. When no host is present, the pathogenic fungi expend their energy and die. This is effective against several soil born diseases including *Verticillium*. In addition, a rather significant enhancement of growth in the test plants has been observed.

With the phase out of Methyl Bromide, growers have been seeking replacement soil treatments. Biofumigatin is nearly as effective as MB against fungi, and it is cheaper. It seems to target only pathogenic fungi, and it is safe.

A simple search of Biofumigation on the internet will result in a number of hits. This is a very hot topic. In Australia, farmers are alternating Brassica green manures with Wheat for increased yields. In California, large commercial growers are combining solarization with biofumigation to treat weed seed and fungi at the same time. More research is going on in Oregon, Idaho and Germany.

Dr. Linderman has also researched the use of composts in production. He suggests that the increased microbial activity as a result of composting suppresses pathogens. Just topdressing established plantings can be very helpful.

We've all known that the use

of Mycorrhizae is helpful to trees in obtaining water and nutrients. Dr. Linderman reports that there are several ways in which Mycorrhizae also suppress pathogens.

Combining these techniques should produce a better product at less expense for the tree grower. You may try treating your soil when your fields are fallow. Finding and adding mulch to your fields may be difficult, but it will pay off in less use of chemicals and fertilizers. Inoculating roots with Mycorrhizae is easy. Robinson has been doing it for some time. Our transplant losses are down.

Some growers are just stubborn and scoff at "going Green". For soil borne fungi, the chemical companies have given us little to work with. Biofumigation, Compost and Mycorrhizae are very promising techniques. They may work for you and be good for the planet. So come on. Get out there and hug a tree!

Changing Times



Every time I see a barn like this I wonder what it looked like when it was new, when it was the hub of activity of a family farm. It had to be the pride and joy of that farmer. Red with a shake roof, in fall the mow filled with hay, the grain bins bursting, it was a dry place to work. Morning and evening the stanchions full of cows, the cats are waiting for their dish of creamy milk. Laughter

is heard above, the kids making a fort of hay bails. This barn seems to be a metaphor for what has happened to the family farm.

Will our grandchildren passing dilapidated greenhouses wonder about the family nursery that once thrived there? One thing is for certain: change is inevitable, and flexibility is the key to survival.