

A NEW APPROACH: STRENGTHENING PLANT'S CELLS

There are disease and pest problems that gardeners have to combat each season to ensure that their plants and gardens are productive and looking their best.

The first course of action is to promote healthy soil, teeming with soil life and earthworms; then endeavour to maintain this most desirable situation.

Weather patterns, temperature fluctuations, light levels, droughts and floods all put stress onto our plants making them vulnerable to diseases and pest problems.

Organic gardening people claim that they have less disease and pest problems because their plants grow naturally and are more resistant.

I go along with that because in Nature diseases and pests are primarily there to take out the weak plants making way for the strong healthy ones.

When plants are affected by disease or pests gardeners will try to solve the problems with either natural or chemical remedies. This has been the norm, using prevention or control products that help solve the problems.

How about a different approach? This is by strengthening the plant's cells so that it makes it difficult for diseases to establish and for insect pests to feed?

That is a very interesting alternative to what we have been used to doing in the past.

Recently I have had contact with representatives of an overseas company that has a vast range of natural solutions to agriculture problems.

One of my concerns that we talked about was in regards to the psyllid that attacks tomatoes, potatoes, tamarillos and similar plants.

The psyllids came from Australia where they are not a great problem as in NZ because of the temperatures in Australia. In NZ our milder summer temperatures are ideal for psyllids to breed and that they do in their thousands. The nymphs on plants are not visible to your naked eye without a magnifying glass of at least x10. Then you may get a real shock at how many are on your tomato plant etc.

What happens is we plant out our tomato plants and they appear to grow nicely, as they gain height and set fruit we start to notice the lower leaves yellowing and falling off.

This progresses up the trunk and then fuzzy moulds appear on the trunk and the plant goes into a decline and eventually dies.

I understand that the psyllid has a weak feeding mouth therefore they have difficulties to feed if the plant has tough outer cell walls which they cannot penetrate. All we need to do then is make the cells of our susceptible plants Armour like, making it difficult for them to feed.

To do this we drench the soil with a product rich in silicon and spray the foliage with a combination of two silicon rich products. The idea is to get silica up through the root system into the plant where it will translocate to the foliage while we also put silica into the foliage. A two way treatment of silicon.

How it is done: Prior to planting we drench the soil with **Wallys Silicon plus Boron Soil Drench** used at 10ml per litre of non-chlorinated water to cover one SqM. Then about 1-2 weeks after planting when say a tomato is starting to show new growth a further drench is applied to the root zone.

The product comes in a 500ml bottle that does 50 SqM

Then we start a foliage spray program using **Wally Silicon Cell Strengtheners Spray** at 5ml per litre of non-chlorinated water (250ml bottle makes 50 litres) mixed with **Wallys Silicon Super Spreader** used at just 1ml per 5 litres of non chlorinated water. It comes a 100ml bottle that makes 500 litres of spray, using the 1ml Transfer Pipet supplied to measure.

The pipet is graduated in 0.25 ml steps so just over 0.25 of a ml into one litre or 0.5 into 2.5 litres of nonchlorinated water.

While our tomato plant is growing upwards a spray of the combined products 2 weekly dropping off to once a month at full height. (Similar for potatoes etc)

Use all the spray mixed up and any left over can be used on preferred plants such as roses etc.

Overseas trials using this cell strengthening program has shown positive results in plant protection.

I have been told that in NZ over half of the commercial Tamarillo growers have lost their crops to the psyllid. I know I can no longer grow one successfully.

Up north there is a Tamarillo grower whose plants are without any noticeable damage from psyllids yet another grower not too far away has lost all his plants to the pest.

The reason is that the unaffected plants are growing in silicon rich soil and they have grown up with the protection of tough cells that the pests can't pierce to feed.

This may allow us gardeners to once again grow plants such as tomatoes, potatoes and tamarillos through the summer months successfully.

It **may** also assist in preventing other problems such as white fly, blights and some other diseases, time will tell as gardeners let me know their results next year.

Another use for this silicon program could be curly leaf on stone fruit trees, I say this because many years ago we had a product that was a sprayable diatomaceous earth (rich in silicon) which a few gardeners used on their stone fruit trees in spring and reported that they had little or no curly leaf.

At the time I could not understand why but now I can understand how it would have helped strengthen the leaf cells and resist the disease. So the same program of a drench now followed by a second one when leaves start to move (which means the sap is rising). Then spray the leaves later on

when flowering is finished.

I am going to grow a couple of Tamarillos from seed using the silicon products this season and see how they go. A third plant will also be grown without the silicon treatment to use as a control. This plant should eventually die while the other two thrive.

You can also test out these silicon products on other plants you may have problems with such as Buxus plantings. I will be interested to hear how you have got on.

The program provides a number of other benefits as well the armour-like protective layer in the outer cell wall.

Silicon promotes more efficient photosynthesis, increasing sugar and mineral levels (brix) particularly in orchard and vine crops.

Minimises the effects of manganese, aluminium and sodium toxicities.

Improves plant growth, lifting yields and quality.

Improves pollination and increases pollen fertility.

Strengthening cells with silicon is certainly a very different and interesting way of overcoming some gardening problems.