

STONEFRUIT IMPROVE PRODUCTION USING BALANCED NUTRITION

Diagnosing and Avoiding Nutrient Deficiencies

Nutrient deficiencies:- Diagnosis is complicated when crops are deficient in more than one element at the same time.

The greatest limitation of relying on the presence of symptoms to manage fruit nutrition is that such symptoms indicate a problem already exists -- reductions in growth, yield or fruit quality may have already occurred. The goal in fertilising is to prevent nutritional problems and their symptoms from occurring.

Today's grower has to work under professional guidance. A lot has been said recently about balanced nutrition, but little is done to achieve it. Balanced nutrition can only be achieved when all nutrients are looked at simultaneously. The old methods of interpreting analytical data regard one mineral at a time and this is unable to take interactions and lock-ups into account.

What really happens in the soil ?

Soil testing provides a means of understanding soil pH and soil chemical properties, salinity levels, and helps estimate nutrient supply.

A poor relationship exists between soil and plant nutrient levels in crops due to declining soil structure and stability, imbalances in the soil caused by the application of incorrect fertilisers, continuous cultivation which decreases soil microbial activity, etc. Therefore, high soil nutrient levels do not assure an adequate supply to the tree.

Plants may not absorb adequate nutrients even though levels in the topsoil appear adequate. Therefore, do not rely on soil testing alone to monitor crop nutrition.

Soil tests are most useful in monitoring soil pH in established orchards. Soil pH greatly influences nutrient availability to plants, and many nutrient deficiencies can be avoided by maintaining soil pH between 6.5 and 7.0. Moreover, the CEC (ability of the soil to retain nutrients) plays a significant role in nutrient availability as does organic matter,

therefore, all these factors need to be taken into consideration in fertiliser programs.

Tissue Testing

Nutrient concentrations in plant tissues are the most accurate indicator of the nutritional health of fruit crops. Plant tissue analysis can be used to diagnose problems and monitor nutrient status so that problems are avoided.

The presence of nutrient deficiency symptoms indicates an acute shortage in the plant that may have reduced yields or fruit quality. Avoid these losses by using tissue analysis to identify nutrients approaching deficiency levels before yields decline or symptoms appear.

Did you pick quality fruit last season?

If not, you didn't use K-FORTE!

Many growers were concerned at the end of the season just passed that their fruit looked good, but didn't eat well, or the size wasn't good, or fruit set has been poor etc. So what was the cause(s).



Apart from the climatic conditions in the last 12 months, and the poor market prices (just to rub more salt in the wound), trees have been showing poor responses to fertilisers. This is due to a lack of Potassium at critical stages of growth. There are many ideas and theories floating around about the ideal methods of fertiliser application, when and how much to apply, but how well thought out are they?

There is never anything better than BALANCE, and this is why all crops respond well to BALANCED NUTRITION. We all know it is important to apply Potassium for colour, and Calcium for firmness and post harvest quality, but when do we apply them and how much do we apply? Isn't Potassium antagonistic towards Calcium? But they are both required at the same time for quality fruit. So what should you do? **USE K-FORTE!**

These are the types of issues we focus on at Zadco. We can ensure you apply the right form of all necessary elements, as well as when the critical timing for their application is. If you want your crop to look like the stone fruit pictured on page 1, you need to ensure the trees are balanced, and that they are fertilised correctly throughout the growing season.

CALCIUM- HOW CRITICAL IS IT?

Calcium is one of the most critical elements in the structure of the tree and fruit.

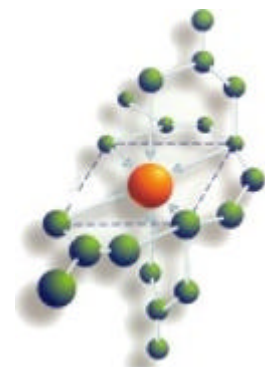
Calcium Deficiency:

- ... Occurs at the shoot tip, with either loss of the growing tip, or the formation of stunted, pale yellow leaves.
- ... Is associated with die back of shoots and roots.
- ... Delays and may even inhibit bud burst in the following season.
- ... Irregular cropping is also caused by Calcium deficiency.
- ... Affects the post harvest quality (keeping quality) of fruit, primarily the fruit skin quality.
- ... Induces fruit splitting and cracking.
- ... Trees become susceptible to pests and diseases due to weaker cells from a lack of Calcium.
- ... It is important to apply Calcium after fruit set because it will assist in the cell division process and reinforce the fruit cell membrane. Continuously re-apply Calcium throughout the season to ensure levels remain adequate.

Not all forms of Calcium sprays (e.g Calcium chloride) are readily available to the plant, as Calcium is not very mobile. The application of Calcium Chloride will cause phytotoxicity over a long period of time due to Chloride accumulating on leaves, as well as interfering with the uptake of Potassium.

The remedial product **BIOMIN CALCIUM** offers an immediate FOLIAR solution to any Calcium deficiency present as it is chelated mainly by Glycine and other natural organic acids and is taken readily into the plants' system. The Biomins are wax soluble, which means they can be applied at any stage of growth, and will enter the fruit also.

Research in California has shown that complexed forms of Calcium (like those found in Biomin Calcium pictured right) are the most efficient forms of Calcium to apply through foliar sprays. They



are absorbed better as well as translocated into fruit.

Remember BIOMIN CALCIUM next season.



WE HOPE YOU HAVEN'T FORGOTTEN TO PUT ON YOUR TRACE ELEMENT APPLICATIONS BEFORE DORMANCY.

For next season, keep the BIOMIN range in mind. Magnesium (12%), Boron (15%), Zinc (20%), Iron (18%), Manganese (18%), and Copper (17%) as individual products, Booster V which contains all the trace elements combined.

WANT SIZE? =USE BIO-SIZE

LATEST IN SOIL ADDITIVES :-

****MOBILIZER!****

Mobilizer reduces the precipitation of Phosphorus, mobilises Calcium, Potassium, Magnesium and trace elements.

It increases the availability of Macro and Micro nutrients by increasing the permeability of the cell membrane.

It increases the Chlorophyll content of the leaves, hence better leaf colour.

It is a buffer and **can be used on all soil types**, regardless of the pH. It is known to aid in leaching Sodium out of the soil. It can be used as a foliar spray and makes the mixing of chemicals easier.

TRI-D25 - A MUST FOR YOUR SOIL!

Recently there has been a lot of hype around the use of *Trichoderma* as an alternative to chemical control on many detrimental fungi. **TRI-D25** has shown promising results in all major industries. Using **TRI-D25** has shown many rewards; abundant root proliferation, improved growth and vigour, healthier trees, and accordingly, better quality fruit. (Tri-D25 can aid in suppressing soil borne pathogens.)

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