



Post-harvest nutrient focus

While an adequate and balanced supply of nutrients is essential for healthy growth to generate maximum performance throughout the growing season, as every harvest draws to an end, new challenges are highlighted.

The season of 2018 has been exceptionally challenging, with accumulative higher than average temperatures, creating high levels of abiotic and biotic stress compromising vital nutrient metabolism in many perennial crops. Deficiencies are ever becoming more prevalent as intensive growing systems and higher yielding varieties are adopted.

Having an increased understanding of crop nutrients and the specific role each element plays in combination with naturally occurring bio-stimulants, that can support plant health is key to unlocking the full potential and quality of any crop.

As a starting point we need to ensure that all perennial crops are sufficiently replenished with vital nutrients and bio-stimulant materials that improve the plants ability to store energy before winter dormancy approaches ensuring a productive following crop. Soil or substrate analysis will help to identify any potential 'hidden hungers' as early as possible and provide the greatest opportunity to take corrective action, however for soil crops, if not corrected early in the spring; a foliar option will often provide the most effective corrective response.

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The neglected element

Sulphur is 'the neglected element'. The past 20 years plus have seen a natural depletion of sulphur from the atmosphere as the 'clean up' of Industry has resulted in a steady decline in levels. Combine this with the decrease in fruit recipes and fertilisers containing sulphur, plus increased crop yields removing more nutrients from the rootzone and it's easy to see why a notable increase in sulphur deficiency is being observed. Statistical data from soil samples passing through Lancrop Laboratories indicated that in 1995 62% of soils analysed were Sulphur deficient. In 2018 that figure has risen to beyond 90% of samples are sulphur deficient. This is mirrored by leaf tissues samples seeing a similar fall.

The importance of sulphur

Sulphur plays a role in many processes in fruit crops so is an essential nutrient for plant growth.

- Sulphur is a component of several amino acids that are essential for forming plant proteins
- As a sulphur deficient plant cannot metabolize nitrate-N, the symptoms of a paling effect on both old and young leaves and retarded growth are often confused with nitrogen or iron deficiency as the production of chlorophyll is inhibited. Especially as it is the youngest leaves that first show deficiency.
- Another important consideration is that low sulphur levels later in the season can inhibit fruit maturity and the fruit does not colour.

It is important with any fruit crop that sulphur levels be maintained either through irrigated nutrients or from soil application. However, it is important to consider that an over - supply of sulphur, more than can be utilised by the crop will build up in the rootzone as sulphate.

This will have a detrimental effect with metal cations in the rootzone especially the secondary nutrients of magnesium and calcium. Sulphate which is free to bond to other metals will readily 'pick up' these two important cations causing all three elements to be less available, leading to the rootzones becoming deficient in available magnesium and or calcium, resulting in symptoms of deficiency.

While magnesium and manganese are both vital constituents of the chlorophyll molecule and are effectively the plant's 'engine room' as the plant converts sunlight into energy, they are also involved in many biochemical functions within the plant. Calcium is as important. Along with silicon it is the building block of every cell and is only upwardly mobile in the plant so any interruption in flow from the roots will have dramatic effects on the crop and its fruit.





Autumn application

If growing irrigated fruit crops sulphur may well already be part of the recipe, however many recipes have become more nitrate based so it is advisable to change any nitrate based recipe so include an element of sulphur, post-harvest. If irrigation water is naturally high in sulphate don't just assume the sulphur is available. It will be bonded with other elements in the water such as calcium so will need an acid to degrade the bonds, to allow availability. This can be the usual nitric or phosphoric acids used regularly in growing berry crops but can also be in the form of organic acids such as humic or other alternatives, should the irrigation water not support the use of aggressive acids.

If adding sulphur to any recipe, the use of any sulphate based nutrient will add support.

For soil grown fruit crops such as tree or bush fruit, later season correction is always best achieved with foliar application. Many farmers and growers believe that the applications of elemental sulphur, often used to reduce pathogen infection will give the plant valuable sulphur however this is not the case. This form is very poor at delivering nutrient sulphur and will do nothing as a foliar application. For best results always use a sulphate based fertiliser.



We recommend

Mas-Power KS is foliar potassium which contains high levels of sulphate. Made from the unique compound 'Potassium Thiosulphate' renowned as the best form of foliar potassium for fruit trees, Mas-Power KS delivers a 27 % sulphate boost. The foliar fertiliser also contains our Mas-power KS support package of plant extracts designed to optimise penetration, distribution and assimilation of potassium and sulphur.

Mas-Power KS can be applied anytime through the season and is best applied after leaf tissue analysis shows a requirement. Current analysis suggests that levels of 10ppm or above are acceptable however EAE fruit agronomists across Europe now feel levels of 20-30ppm will provide optimal support for all fruit crops. Application from mid-season, pre and post-harvest will provide optimal support for fruit and plant.

For further information contact your EAE advisor - downloads are available on the following link.

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**Contact
us**

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