



Plant Bio Regulators (Pty) Ltd

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NONTOX-SILICA™ AND THE ROLL OF SILICON IN PLANTS

Silicon is not an essential nutrient element but has a beneficiary influence on plant growth and production by means of several actions to lessen environmental stress and to stimulate the natural protection mechanisms of plants. The main actions are:

1. During evaporation of the water through transpiration, the silicon is precipitated just beneath the epidermis to form a protective shield in the stems, twigs, leaves and fruit.
2. Si forms cross links with lignin and polyphenols in all cell walls. These compounds are elastic but insoluble in water and form barriers against fungal attack.
3. Stimulates the natural defence mechanism of plants by increasing the concentration of phenol, peroxidase and chitinase in the roots and other cells.
4. Improve production and quality of fruit by stimulating the formation of phospho-sugars like ADP and ATP.
5. Fix heavy metals.

The crust of the earth contains about 28% Si but almost all are in an insoluble form and not available to plants.

Plants absorb Si through the roots and transport it to the twigs, leaves and fruit. Si does not move from the top to the roots and will, for all practical purposes are not relocated within the plant. Foliar sprays of Si will be absorbed by the leaves but not relocated to the roots. However, those products resulting from the foliar application of silicon, like phenols, will be translocated to the roots.

Silica is not toxic and is present in our food and water.

Nontox Silica^R contains at least 10% water soluble silicon which is readily absorbed by the roots and leaves of plants. Nontox Silica^R can be applied by means of fertigation or foliar spays. Nontox Silica^R is supplied as a white powder or a brown liquid. A stock solution needs to be prepared by dissolving the white powder in water before any dilution is attempted.

PREPARATION OF THE STOCK SOLUTION

- Dissolve 400g Nontox Silica^R in one litre water (or 4kg in 10 litres water)
- Shake or stir until all material is dissolved.
- Leave overnight and then dilute as indicated above.

Nontox Silica^R is available as a powder and a ready to use stock solution.

For technical enquiries contact John Pretorius 083-228 0258 or Hannes Coetzee 082-785 7595.