

Sil-Koat™



Sil-Koat™ is a unique formulation of a highly plant-available form of silicon blended with humic and fulvic acids, premium North Atlantic kelp, and boron



- ✓ Quality
- ✓ Investment
- ✓ Service

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Give your crop a Sil-Koat™ of armour



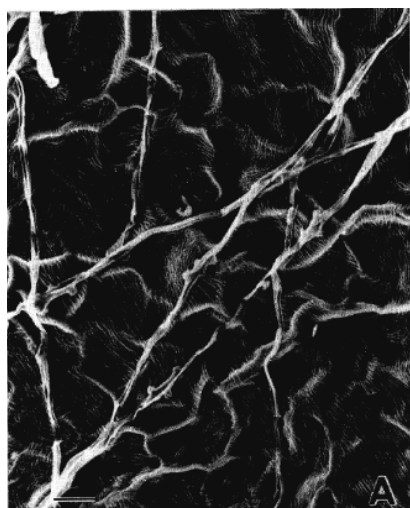
Sil-Koat™

Product Code: GG0195

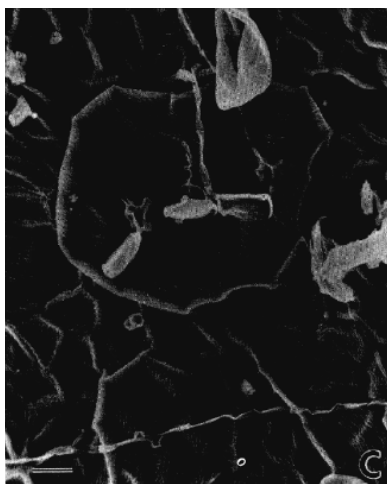
Sil-Koat™ is a unique formulation of highly plant-available form of silicon blended with humic and fulvic acids, premium North Atlantic kelp, and boron. Sil-Koat™'s ingredients work synergistically to give your crop a multi-pronged defence against abiotic and biotic stressors – helping enhance crop performance under the harshest Australian conditions.

Benefits of Silicon

When foliar applied, silicon works across all crop types to increase resistance to pathogens and disease by forming a physical barrier to the leaf surface. In silicon-treated plants, fungal appressoria and insect mandibles have both been shown to have reduced plant penetration and increased wear and tear.



Microscope images of untreated grape leaves showing normal powdery mildew appressoria penetration.



Grape leaves treated with foliar Si showed bent and distorted powdery mildew appressoria due to a Si-barrier on the leaf surface, considerably inhibiting their development. (Bowen *et al.*, 1992)

Guaranteed Analysis (w/v)

| | |
|------------------|-------------|
| Potassium (K) | 26.1% |
| Silicon (Si) | 17.9% |
| Boron (B) | 1.1% |
| Iron (Fe) | 0.008% |
| Fulvic Acid | 0.05% |
| Humic Acid | 1.3% |
| Kelp | 1.2% |
| Specific Gravity | 1.556 kg/L |
| pH | 12.0 - 14.0 |

Typical Application Rates

Foliar:

1.5 - 3 L/ha
Apply every 10 - 15 days as required
Horticulture use 200 to 2,000 L/ha water
Broadacre use at least 100 L/ha water

Fertigation:

2.5 - 5 L/ha
Apply every 10 - 15 days as required

Contact:

T: 1800 768 224

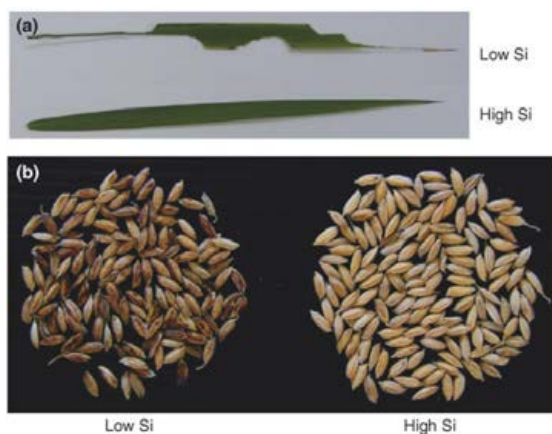
E: enquiries@sltec.com.au

W: sltec.com.au

When fertigated*, silicon:

- Improves resistance to pathogens and insects damage

Si taken up by the roots is carried by the transpiration stream and deposited beneath the cuticle to form a cuticle-Si double layer, adding an extra layer of defence to fungal appressoria penetration and insect attack. Si has also been shown to reduce soil nematode levels.



Ma and Yamaji (2006) have shown that rice with low Si levels are more susceptible to insect attack (a) and fungal infection (b) than high Si rice.

- Increases cell rigidity, resistance to lodging, and increases photosynthesis in high density crops such as cereals by keeping leaves erect

Si can increase the physical stability of plants by being deposited in cell walls and by modulating lignin biosynthesis. Si is 20 times more energy efficient as a plant cell wall stabiliser than lignin. Si uptake and deposition in cell walls can reduce the energy expenditure of crops and increase the structural strength of cell walls, contributing to greater crop performance.

- Reduces transpiration and stomatal closure

Deposition of Si along the transpiration stream and near stomata reduces the aperture of the xylem and water flow rate, helping to maintain cell turgor and keep stomata open during periods of water and temperature stress.

- Increases photosynthesis and growth under stress conditions, enhancing root activity and water and nutrient uptake
- Alleviates heavy metal toxicity

At lower soil pH, heavy metals such as Al, Mn, Fe are more soluble and can result in heavy metal toxicity. Si reduces plant uptake of heavy metals by binding to them and forming insoluble minerals.

Benefits of Kelp

Premium North Atlantic Kelp extract (*Ascophyllum nodosum*)

Our *A. nodosum* kelp extract is a plant biostimulant that contains a wide range of beneficial metabolites proven to upregulate and boost natural plant biosynthetic pathways. Harvested from the cold waters of the North Atlantic ocean, this seaweed contains beneficial plant metabolites such as polysaccharides, amino acids, polyphenolic compounds, polyamines and betaines.

Working in synergy with silicon to reduce stress, *A. nodosum* seaweed extracts:

- increase nutrient uptake & yield
- increase shelf life of fruit and cut flowers
- increase frost tolerance
- increase high temperature tolerance
- decrease water stress, due both to drought and salinity
- increase chlorophyll production
- repair the photosynthetic system
- decrease accumulation of harmful reactive oxygen species
- increase resistance to fungal & sucking insect attack
- increase rachis stretch (grapes)
- increase fruit set
- decrease crop stress associated with fungicide applications

Benefits of Humic Acid

Humates are soil conditioners that assist in releasing bound nutrients into plant available forms, stimulate soil fungi growth and help to improve soil structure at relatively low application rates.

The benefits of humic acid include:

- Improves soil moisture and nutrient retention
- Reduces nutrient lock-up in the soil
- Helps the development of better soil structures
- Simulates plant root growth and soil biological activity

* Fertigation of Si may not suit all crops. Speak with your SLTEC agronomist to find out if Sil-Koat is right for your fertigation needs.

References

Bowen, P., Menzies, J., Ehret, D., Samuels, L., & Glass, A. D. (1992). Soluble silicon sprays inhibit powdery mildew development on grape leaves. *Journal of the American Society for Horticultural Science*, 117(6), 906-912.
Ma, J. F., & Yamaji, N. (2006). Silicon uptake and accumulation in higher plants. *Trends in Plant Science*, 11(8), 392-397. <https://doi.org/10.1016/j.tplants.2006.06.007>



1800 768 224
enquiries@sltec.com.au

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