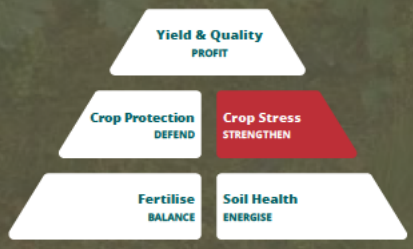
SUSTAINABLE FARMING SOLUTIONS

# Table Grapes

# Super Kelp

## Superior Growth
## Stronger Plants
## Mixes Easily




**Stress Tolerance - heat and frost**

### Activity

- Improved plant canopy
- Increased root growth
- Increase rachis length, berry numbers & bunch weight
- Improved plant defence system
- Improved flower retention and fruit set



Treated bunches fuller with larger grapes indicating more vigour.

### Results

#### Stress Tolerance

Plants better able to withstand environmental stress (drought, frost, heat)

#### Plant Vigor

Greener plants & better developed canopy

#### Yield Increase

Increased production, sizing and quality and delayed senescence

#### Ease of Use

Compatible with fertilisers (particularly calcium nitrate, potassium nitrate), fungicides, insecticides, acidic GA

Can be applied with copper and fungicide sprays

Liquid filtered to 90 microns to ensure it can be used as a foliar spray (or via irrigation) and acidified to a pH of 4-4.5 (for stability).

*Harness the power of nature*

# Super Kelp

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## Why Super Kelp works

### Improved crop performance

*In kelp, macro- and micro- elemental nutrients, amino acids, vitamins, cytokinins, auxins, betaines, alginates, sterols and abscisic acid affect cellular metabolism in plants that lead to enhanced growth and yield. They are bioactive at low concentrations.* - *Khan 2009; Blunden 1997*

### Heat Tolerance

*Kelp can be used to provide protection during heat stress with effects lasting for 2-3 weeks. Betains in Kelp increase chlorophyll content and consequently photosynthesis, cytokinins induce heat tolerance, increase potassium uptake and improve root growth , while anti-oxidants in Kelp help plants in temperature extremes.* - *Khan, 2009; Ervin 2004*

### Frost Tolerance

*Offers an extra degree or two tolerance to frost, although some information suggests as high as 3-4$^0$C.Lowers temperature at which cells will freeze. This is because it is a highly effective brix builder. Plants with higher sugar content have a lower freezing point.* - *Wilson 2001*

### Improved flower and berry set

*Kelp enhances the mobilization of cytokinins from the roots to the developing fruit. This increase in cytokinin availability will eventually result in greater supply of cytokinins to the maturing fruit.* - *Khan 2009*

### Enhanced plant defence against pest and diseases

- *Kelp imparts nematode resistance possibly by altering the auxin:cytokinin ratio in the plant* - *Khan 2009*
- *Kelp contains elicitors (eg polysaccharides) which plants use to protect themselves against pathogen invasion.* - *Khan 2009*
- *Alginates in Kelp promote growth of beneficial fungi which colonise roots and result in stronger plants* - *Kuwada 2006*

## How to use

*Super Kelp can be applied every 4 - 6 weeks during the growing season as a foliar feed or soil drench, enabling the plant to receive direct benefits from the naturally balanced nutrients and growth promoting substances.*

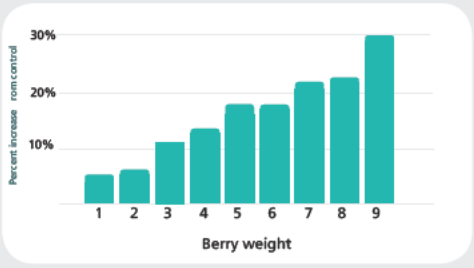
### For heat and cold (frost) stress:

- *Apply 36-48 hours prior to stress event as a foliar spray or via irrigation. During events it is recommended to apply via irrigation.*
- *Repeat every 14 days during extended heat and cold periods. For extra frost tolerance it can be mixed with 0.5% potassium fertiliser to help strengthen plants.*

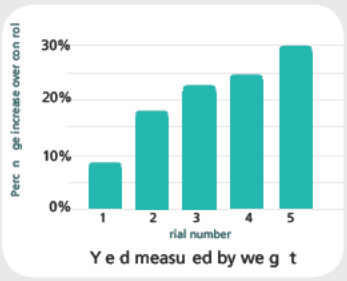
### Drought Tolerance:

- *Regular use during drought to stimulate root growth can help crops explore greater soil volume and access moisture.*

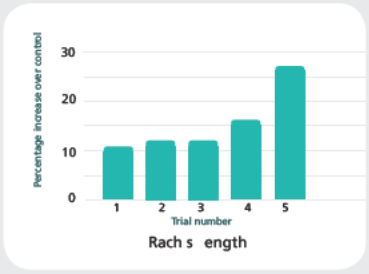
## A selection of results




Multiple trials show increase in berry weight by an average of 16%.




Multiple trials show increase in yield by weight by an average of 20%.




Multiple trials show increase in rachis length by an average of 17%. Elongating the rachis is essential for bunch growth.

Applying kelp pre-bloom after rachis has grown 5 cms helps elongate the bunch-rachis.


Treated grapes have more uniform size and colour

## Information & Advice

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