



agrⁱchem



Enhance KCS Segmenting the market



INNOVATING *25* years IN CROP NUTRITION

How is KCS different?

- Cream suspension
- Neutral pH
- Better compatibility
- Slow release – better soil applied
- Market potential:
 - Shelf life
 - Salinity – hort, greenhouse, patches in broadacre
 - Crops that also have high Ca req eg spuds, peanuts, onions



Market potential cont/...

- Extreme weather – drought, heat
- Soil-borne diseases – Fusarium spp, Verticillium spp, Phytophthora spp
- Turf



Need to *enhance* plant resistance to high salinity?



- Do you have salt residues on the soil?
- Crops struggling as a result of high sodium levels?



Required to *enhance* plant resistance to diseases?



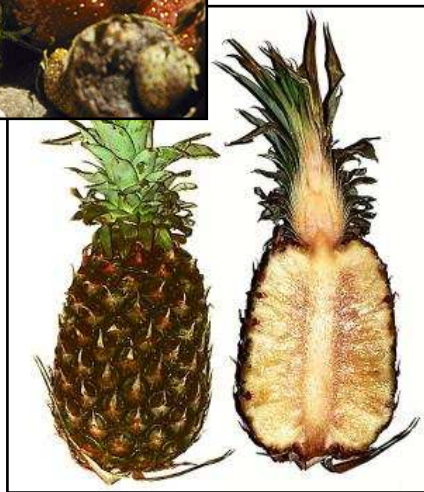
- Disease problems?
- Phytophthora in avocados?
- Susceptible cultivars?



Physiological problems- need *enhanced* cell strength?



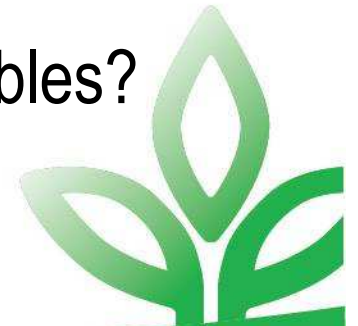
- Pineapple translucence
- Fruit prone to soft rots
- Bruising on fruit?



Enhance KCS will *enhance* plant performance



- Saline soils?
- Extreme weather conditions
- Soil-borne pest and disease problems?
- Soft fruit or vegetables?



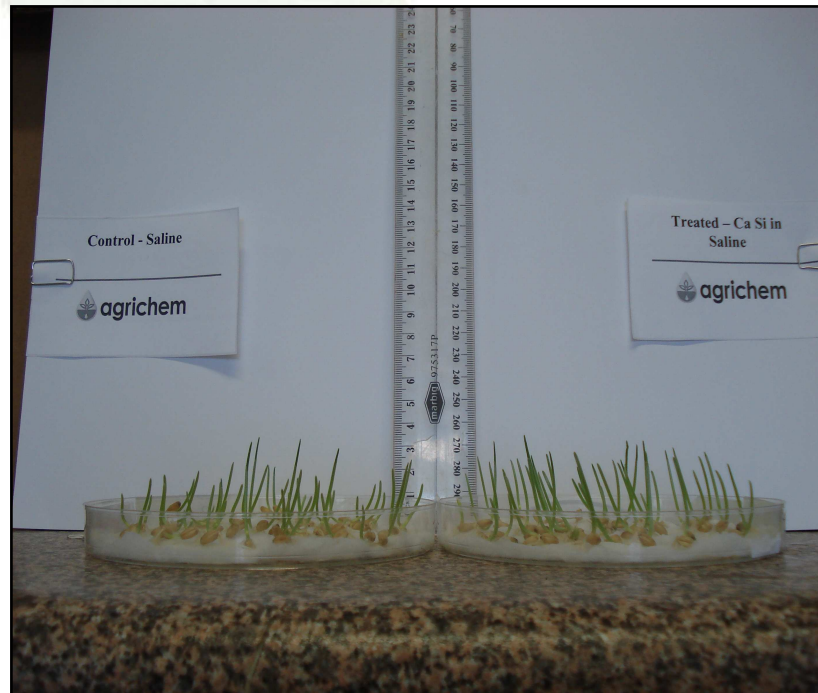
The Solution



- **Analysis**
 - 7% calcium
 - 11% silica
 - 5% potassium
 - 1.7% nitrogen
 -
- **Formulation type**
 - Suspension
- **Packsizes**
 - 10 L, 200 L
- **Application**
 - Fertigation
 - Soil applied
 - See label for crop rates



Enhance Salinity Tolerance



- Observation Duration: 7days
- Crop: Wheat
- Treated → add 0.3% sodium chloride in 5L/T Treatment
- Control → 10% sea water strength



Overcome Salinity-Wheat Seed Dressing

- Thicker stem diameter
- Heavier root & shoot weight
- More chlorophyll
- Increased root weight over control



| | Control | 0.3%NaCl | 0.3% NaCl Plus CaSi |
|-----------------------------|---------|----------|---------------------|
| <i>Fresh Root wt (g)</i> | 53.0 | 54.5 | 74.5 |
| <i>Fresh Shoot wt (g)</i> | 10.9 | 6.8 | 9.9 |
| <i>Number germinated</i> | 28 | 22 | 20 |
| <i>Average Shoot Wt (g)</i> | 0.39 | 0.31 | 0.50 |
| <i>Average Chlorophyll</i> | 30.4 | 25.7 | 27.7 |

Overcome Salinity- 2nd Seed Dressing



- Crop: Wheat (Janz)
- Trial Duration: 2weeks
- Where: Agrichem greenhouse

| Treatment | Rate L/Tonne seed | SG | g/100g of seed |
|--------------------------|----------------------|------|----------------|
| Product CS + Good Soil | 10L/T | 1.47 | 1.47 |
| Product CS + Saline Soil | 10L/T | 1.47 | 1.47 |
| Control - Good Soil | - | - | - |
| Control - Saline Soil | - | - | - |



The effect of Enhance KCS on pineapples

Leaf Analysis Report

Cawarral, QLD 4702

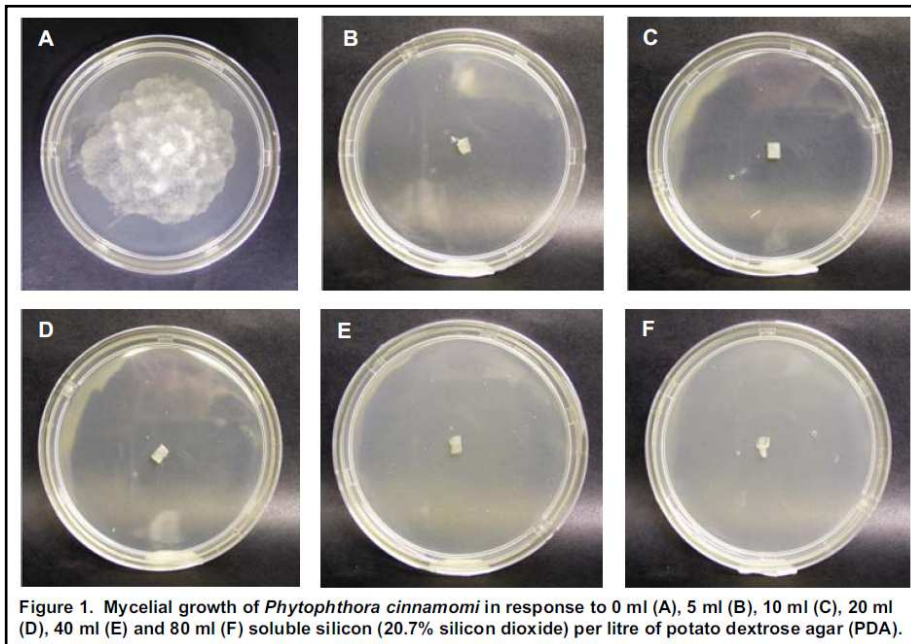
*Grower comments:
Reduced fruit crack
and leaking by 20% .
Increased income by
\$4000.*

*The grower was told
that 150ppm Ca was
sufficient but he found
at 500ppm he still had
cracking; however at
600ppm there was no
cracking*

| | Pre-treatment | Status | Post-treatment | Status |
|----------------|---------------|--------|----------------|-----------|
| Block | Ca ppm | | Ca ppm | |
| | | | | |
| Y2 grown - 46A | 66 | Low | 650 | Excessive |
| Y2 grown - 65 | 140 | Good | 170 | Good |
| | | | | |

Product application rate : 10L/ha

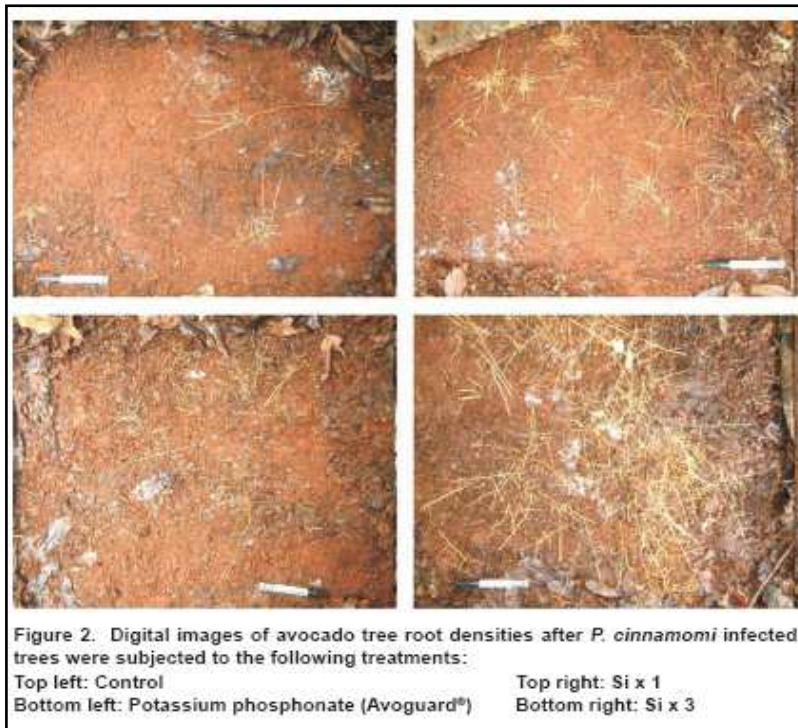
Suppressing *Phytophthora*



- Trials in South Africa showed a reduction in disease in the laboratory
- Silicon at 20ml/L was adequate to prevent growth of *Phytophthora cinnamomi*

Ref: Kaiser et. (2005) South African Avocado Growers' Association Yearbook 28

Phytophthora in avocados



- South African field trial trts show improved root density :
 1. soil drenched under drip line with Si at 20L either 1x, 2x or 3x
 2. PA injection
 3. Control drenched with water
- Enhance KCS will also reduce sporulation of the disease

Sugar cane – increasing yields

| Ratoon Sugar Cane | | |
|-------------------|-------|-------|
| Treatment | CCS | Yield |
| Tully, QLD 4854 | | |
| November 2008 | | |
| Control | 15.53 | 66.43 |
| Enhance KCS 5L/ha | 15.79 | 68.72 |
| Control | 15.99 | 68.16 |
| Enhance KCS 5L/ha | 15.86 | 69.45 |

Results are there, even though they are small. This is most likely a function of rate

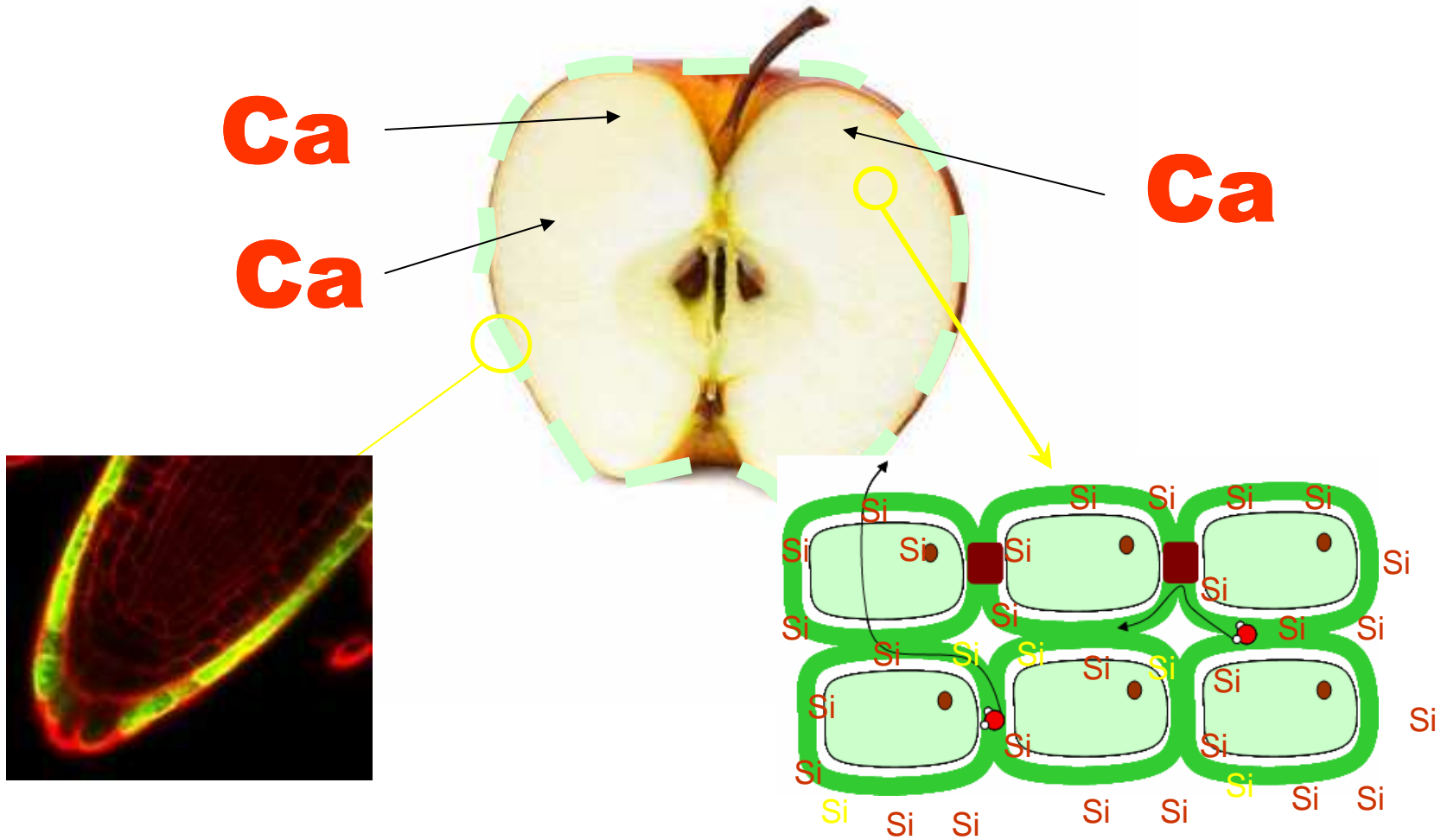
Need *enhanced* resistance to drought and frost?



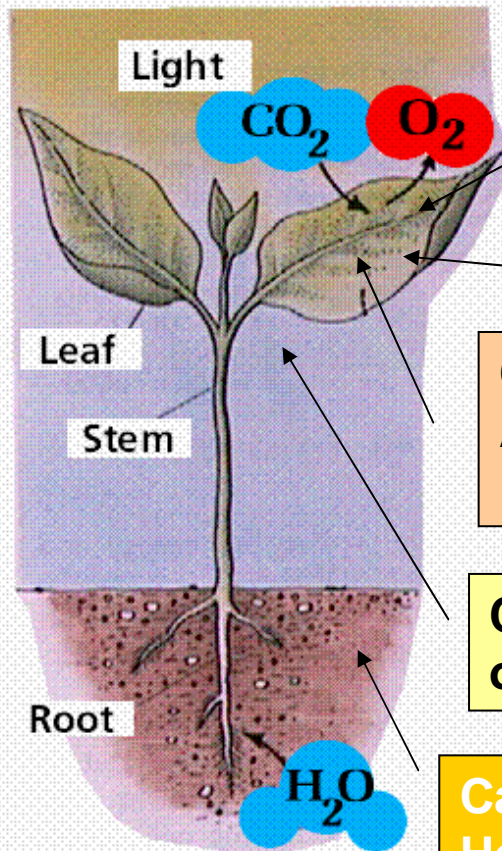
- Forecasts for dry weather?
- Heat wave?
- Expecting frost?



Double Protection – Ca and Si Enhance fruit quality and shelf life



Calcium – the ideal partner



Ca – elevates levels of proline and glycine betaine, reducing oxidative damage

Ca – protects cellular plasma membranes

Ca – involved in ABA induced stomatal closure. ABA is produced in response to drought, salt, cold, high temperature, UV-B, wounding etc

Ca – alleviates symptoms produced by ion stresses or mineral toxicities such as Na or Cl

Ca – displaces sodium on soil particles; Helps establish favourable K:Na ratio under salt stress



Enhance KCS - slow release silica

- **Science:**
 - Enhance KCS has calcium and silica both of which play a role in strengthening plants against environmental stress
- **Utility:**
 - Recommended for use through soil application
- **Testimony:**
 - Silica and calcium help to increase yields, strengthens the plant /fruit and enhances the plants' ability to resist a range of stresses





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Thank you



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