

# **Effect of Prosol Agrigrow on the accumulation of some ingredients in the nursery growth medium**

**N.J.R. Roets**

**ARC – Tropical and Subtropical Crops, Private Bag X11208, Nelspruit,  
1200, e-mail: [nico@arc.agric.za](mailto:nico@arc.agric.za)**

# Methodology

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- 3 month-old-macadamia trees in nursery
- Treatment:
  - Watered with 0.1mL/L (1:10 000) Prosol Agrigrow 3 times per week (Mon, Wed, Fri)
  - Watered with “tap water” on Tue and Thu
  - No fertilizers
- Control:
  - Watered daily with “tap water” only
  - Received nursery fertilizers



# Medium sample analysis

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- Extraction: water extraction of elements
- All elements, except N, P and B were analyzed using atomic absorption spectrometry
- N, P and B were colometrically determined in each sample
- Each replicate were analyzed in triplicate

# Statistics

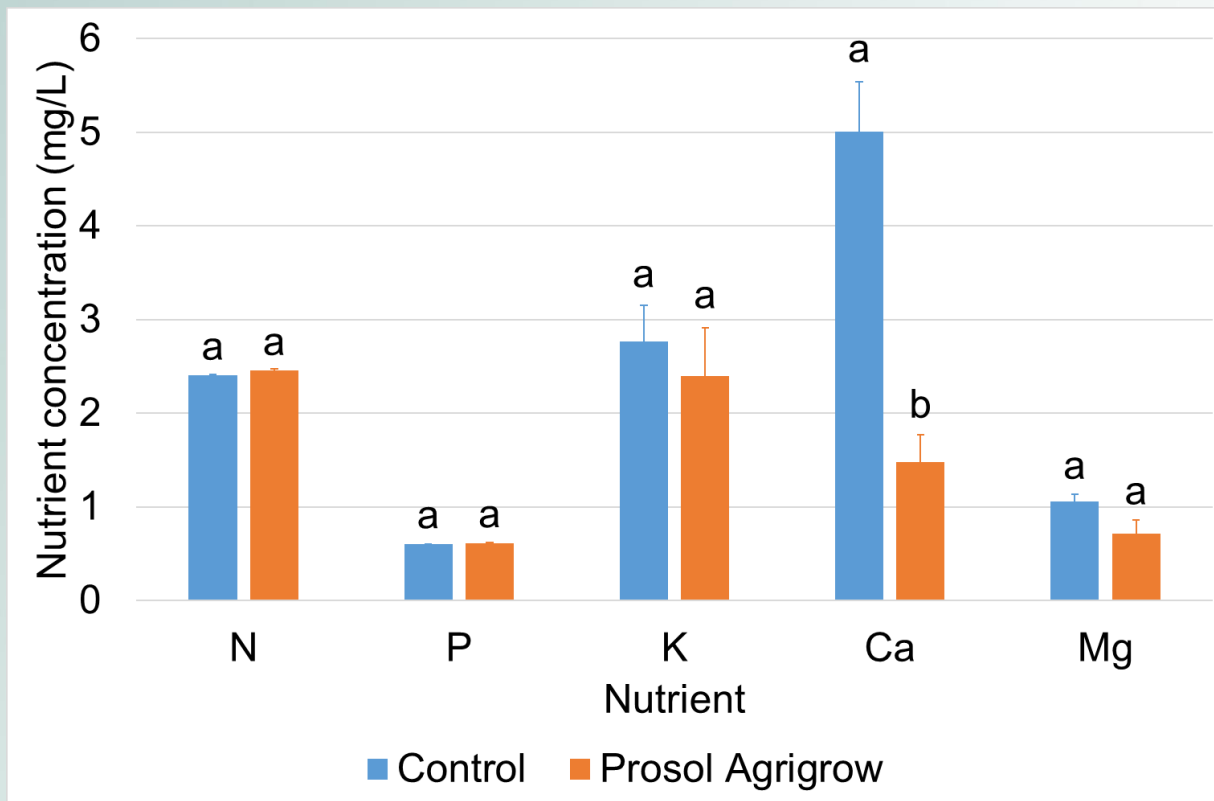
- Each treatment (control and Prosol Agrigrow) consisted of 3 replicates ( $n = 3$ )
- Data analysis was carried out with GenStat version 14 (2010)
- Treatments were compared using ANOVA (Analysis of Variance). Treatments were regarded significantly different when  $P < 0.05$



# Results

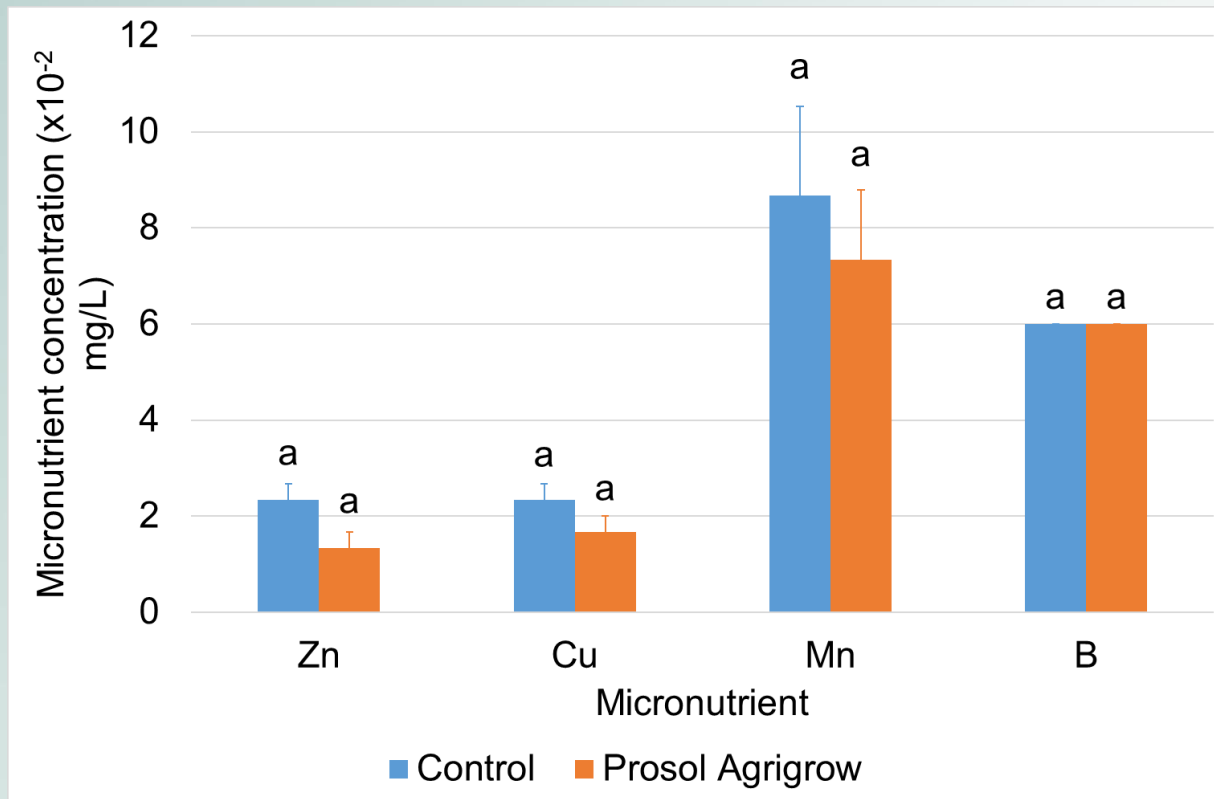
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# Macronutrient levels



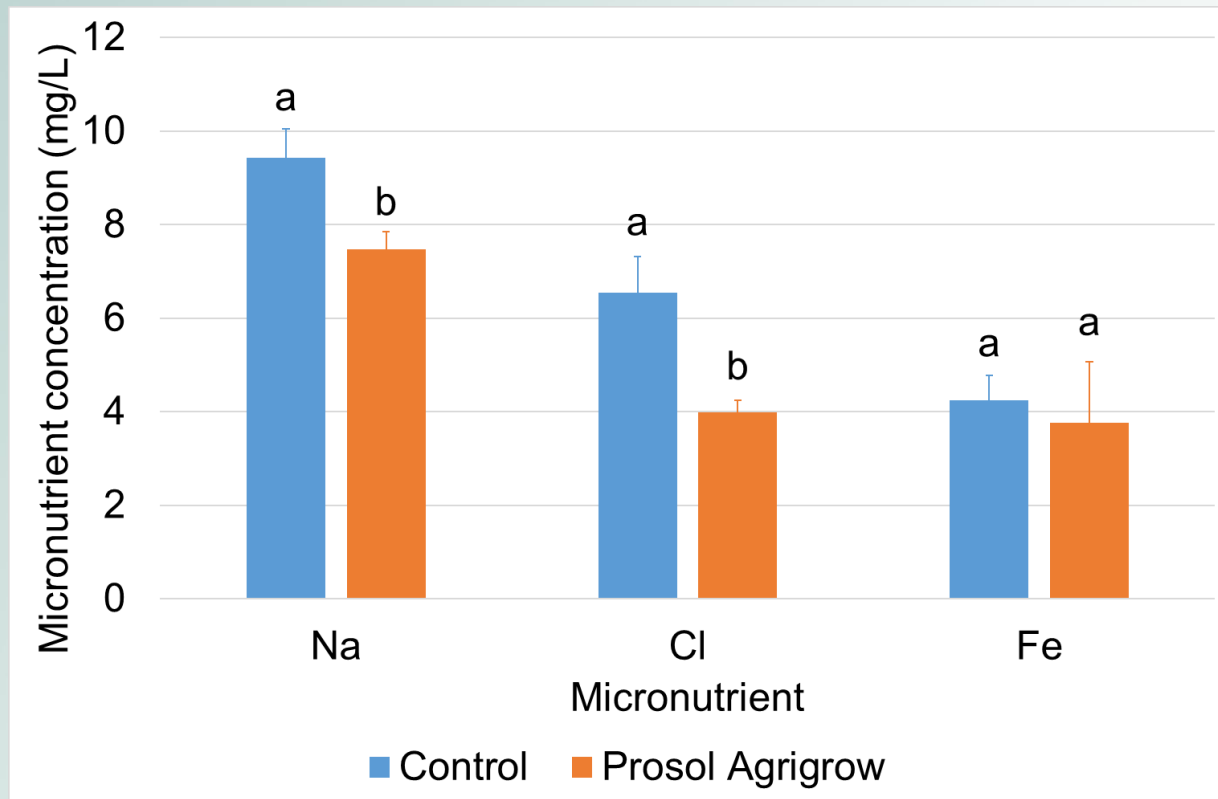
- No accumulation of any macronutrients (N, P, K, Ca and Mg) occurred.
- Ca levels were higher for the control – reason not known

# Micronutrient levels



- No accumulation of the micro-nutrients, Zn, Cu, Mn or B occurred
- Zn and Cu are the ingredients that occur in the highest concentrations in the product, namely 6% Cu(NO<sub>3</sub>)<sub>2</sub> and 2% Zn(NO<sub>3</sub>)<sub>2</sub>, lowest levels in growth medium

# Micro-nutrient levels (cont.)



- Na and Cl levels were significantly lower for containers treated with Prosol Agrigrow, with the Na and Cl levels being reduced with 20.7 and 38.9% respectively. This will hold huge potential if this is a characteristic of the product.
- Fe levels were not affected



# Conclusion

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- No accumulation of nutrients (metals) occurred in the growth medium after 4 months of treatment
- Cu and Zn which occurred in highest concentrations in product did not accumulate either
- Na and Cl levels were reduced, which hold huge potential if this is repeatable.
- Need to continue for another 7 months to simulate the 11 month period macadamia trees spend in the nursery
- Monitoring root and shoot growth and flushing – no significant growth during winter