

SOIL-FOCUSED PRACTICES TO ENHANCE YOUNG CITRUS TREE DEVELOPMENT

Observations from a trial



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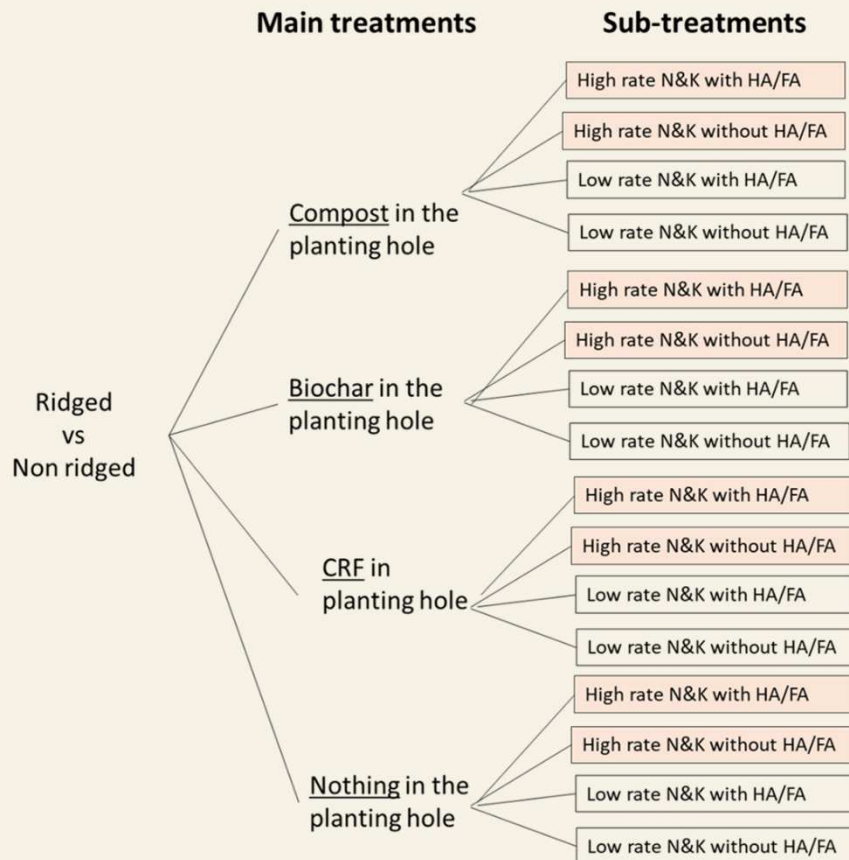
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Main treatments

Sub-treatments

Ridged
vs
Non ridged

Compost in the
planting hole

High rate N&K with HA/FA

High rate N&K without HA/FA

Low rate N&K with HA/FA

Low rate N&K without HA/FA

Biochar in the
planting hole

High rate N&K with HA/FA

High rate N&K without HA/FA

Low rate N&K with HA/FA

Low rate N&K without HA/FA

CRF in
planting hole

High rate N&K with HA/FA

High rate N&K without HA/FA

Low rate N&K with HA/FA

Low rate N&K without HA/FA

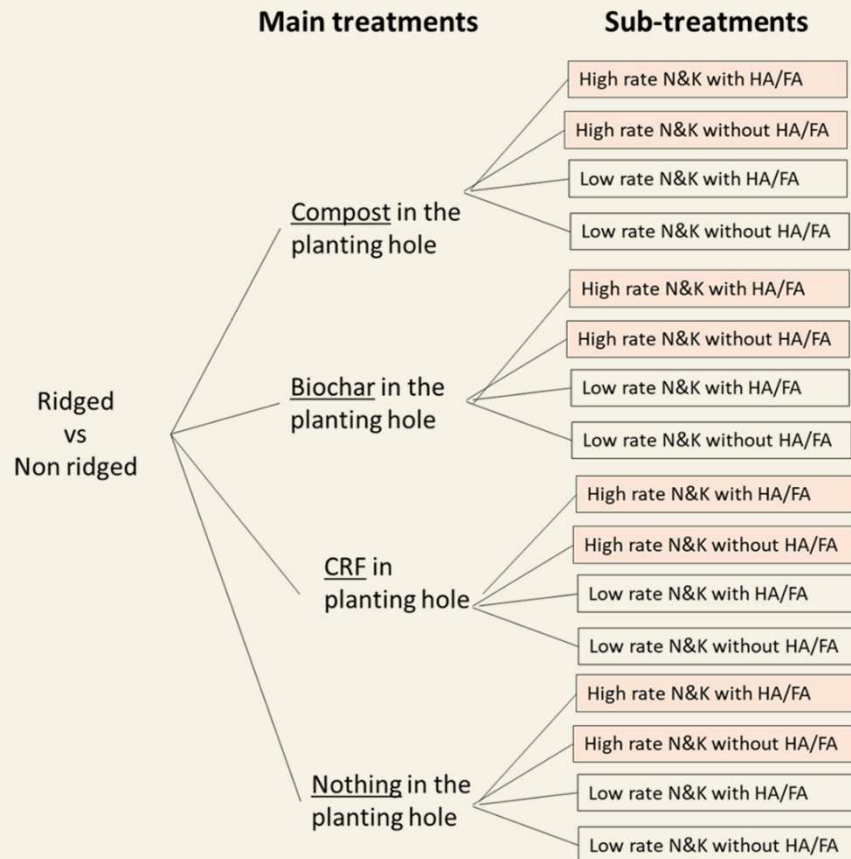
Nothing in the
planting hole

High rate N&K with HA/FA

High rate N&K without HA/FA

Low rate N&K with HA/FA

Low rate N&K without HA/FA





**Differences
at the time of
the first crop?**

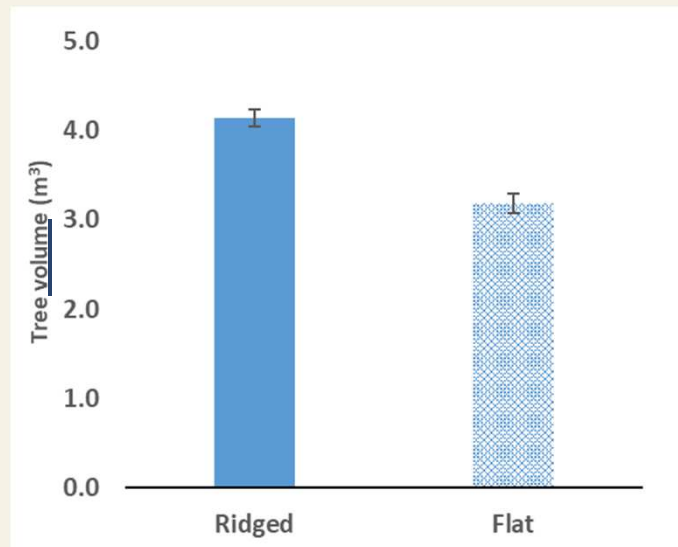
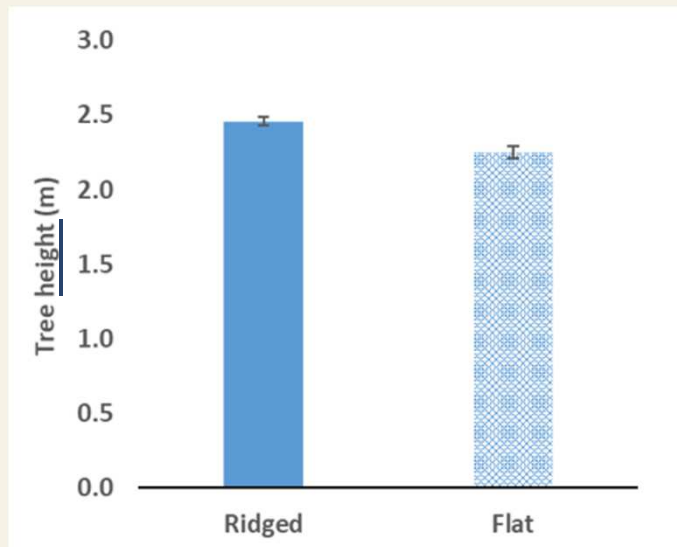


Figure 1. Tree size of three-year-old Mandarin trees planted on ridged soil compared with those on flat soil.

RIDGED SOIL: CONTROL



FLAT SOIL: CONTROL



Figure 2. Examples of root development within the ridged soil versus the flat soil, showing the depth of loosened soil (50 cm vs 30 cm).



RIDGED: BIOCHAR



RIDGED: COMPOST

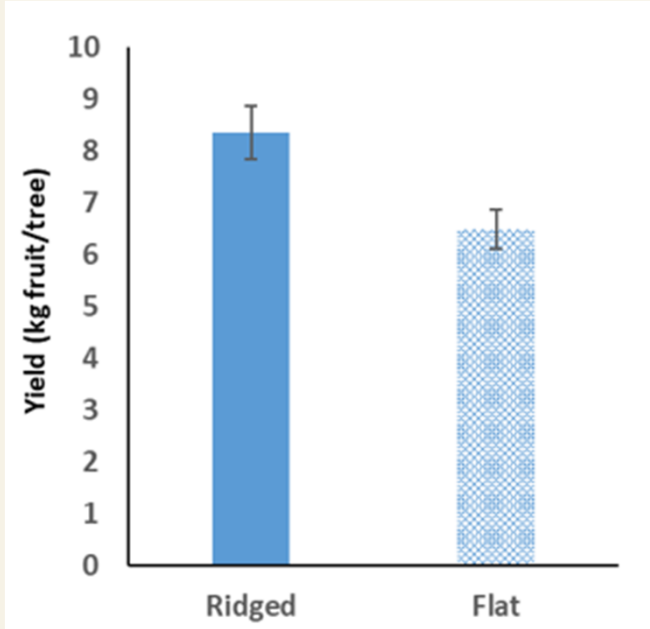


Figure 3. Yield obtained for first harvest, two-year-old Mandarin trees, respectively planted on ridges and flat soil, ...

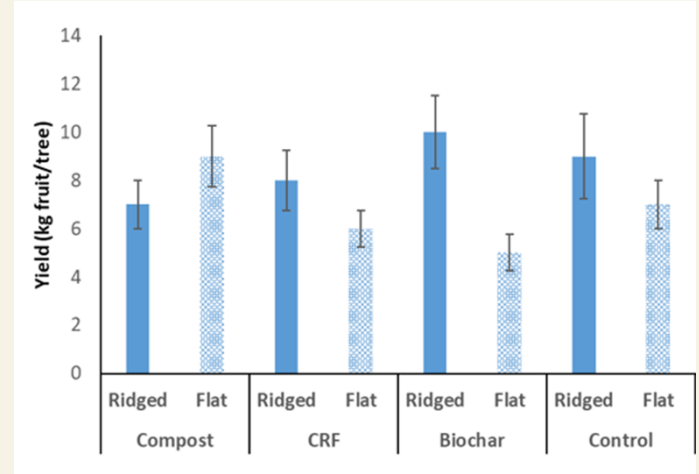
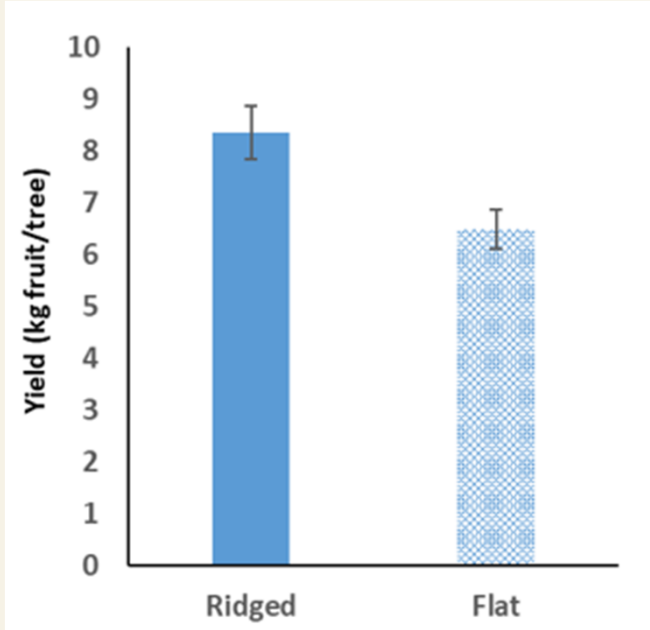


Figure 3. Yield obtained for first harvest, two-year-old Mandarin trees, respectively planted on ridges and flat soil, and with different materials added to the planting holes when the trees were planted.

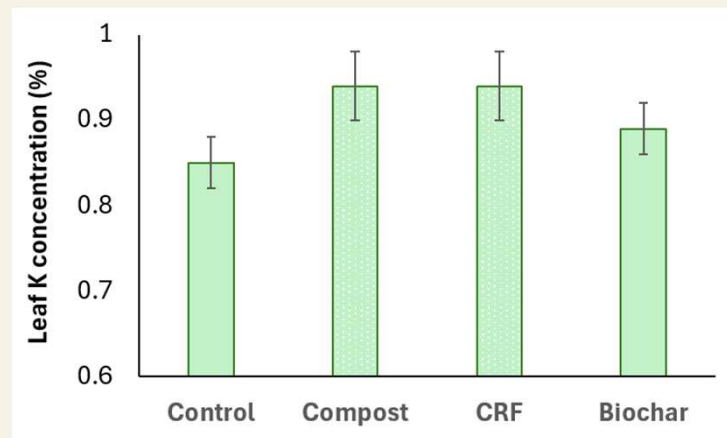
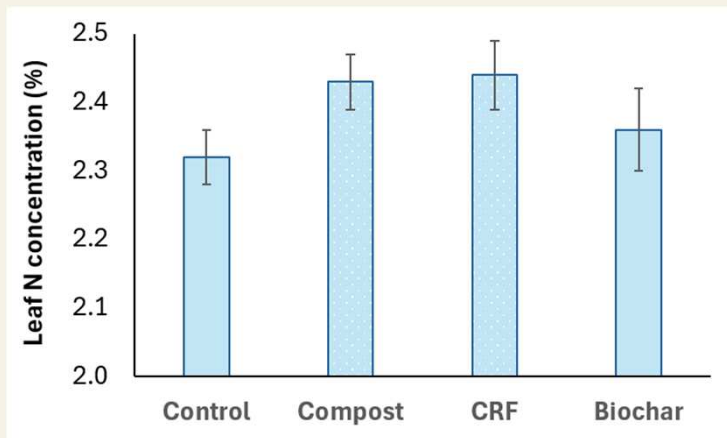
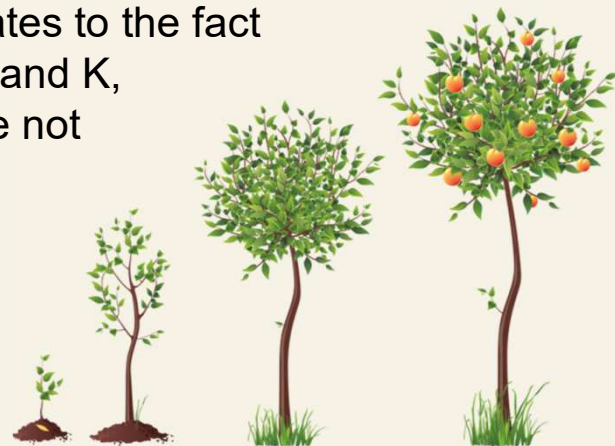


Figure 4. Leaf N and K concentrations of three-year-old mandarin trees as affected by the application of compost, CRF and biochar in the planting holes.

- The higher concentrations of N & K (Compost & CRF) did not affect the vegetative growth of the trees
- Additional N and K, applied as sub-treatments, did not increase the foliar concentration of these nutrients in any of the main treatments (data not shown).
- Similar was also found in other trials – it indicates to the fact that when trees are amply supplied with N, P and K, the foliar concentrations of these nutrients are not readily increased by additional fertilisation.



Points for Discussion



- Ridge vs No Ridge?
- What happened to the biochar?
- Why did the compost/biochar not restrict root development?
- Is a compost & CRF effect after three years possible?

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