

Agronomic Test in Italy

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Interreg
Mediterranean



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RE-LIVE WASTE

Results obtained: significant agronomic value

Struvite produced has an agronomic interest and value. More specifically, the addition of struvite to plants under controlled conditions induced:

- Faster plant germination
- Faster growth (mainly in lettuce) comparable to mineral fertilizer (plant height and leaf number)
- Radish diameter and dry weight were comparable to the data obtained with mineral fertilizer treatments
- Leaf length and Leaf dry weight were higher than the T1 (control). No significant difference with mineral fertilization treatment was observed

The experiment was conducted in greenhouse at Arborea, vivaio Peterle.



% Germination

Radish

| Treatment | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|-----------|-------|-------|-------|-------|-------|
| T1 | 7% | 60% | 93% | 93% | 100% |
| T2 | 47% | 80% | 93% | 100% | 100% |
| T3 | 40% | 67% | 87% | 93% | 100% |
| T4 | 53% | 73% | 93% | 100% | 100% |
| T5 | 67% | 87% | 87% | 100% | 100% |

Lattuce

| Treatment | Day 1 | Day 2 | Day 3 |
|-----------|-------|-------|-------|
| T1 | 83% | 91% | 96% |
| T2 | 56% | 90% | 98% |
| T3 | 61% | 86% | 90% |
| T4 | 50% | 94% | 99% |
| T5 | 54% | 91% | 95% |

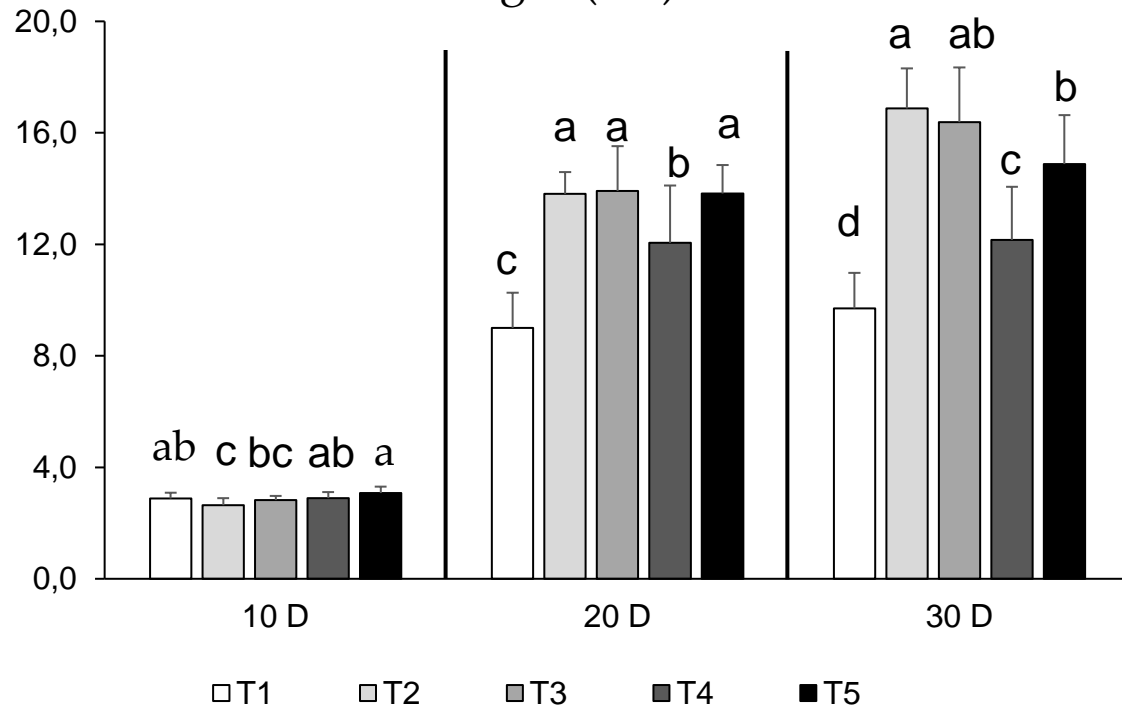
Radish arrive at 100% of germination in 5 days; while lattuce arrive at the highest germination % in 3 days.

Radish: T2, T4, T5 showed the highest germination% since Day 4.

Lattuce: T4 is the best performing treatment in term of % of germination and timing

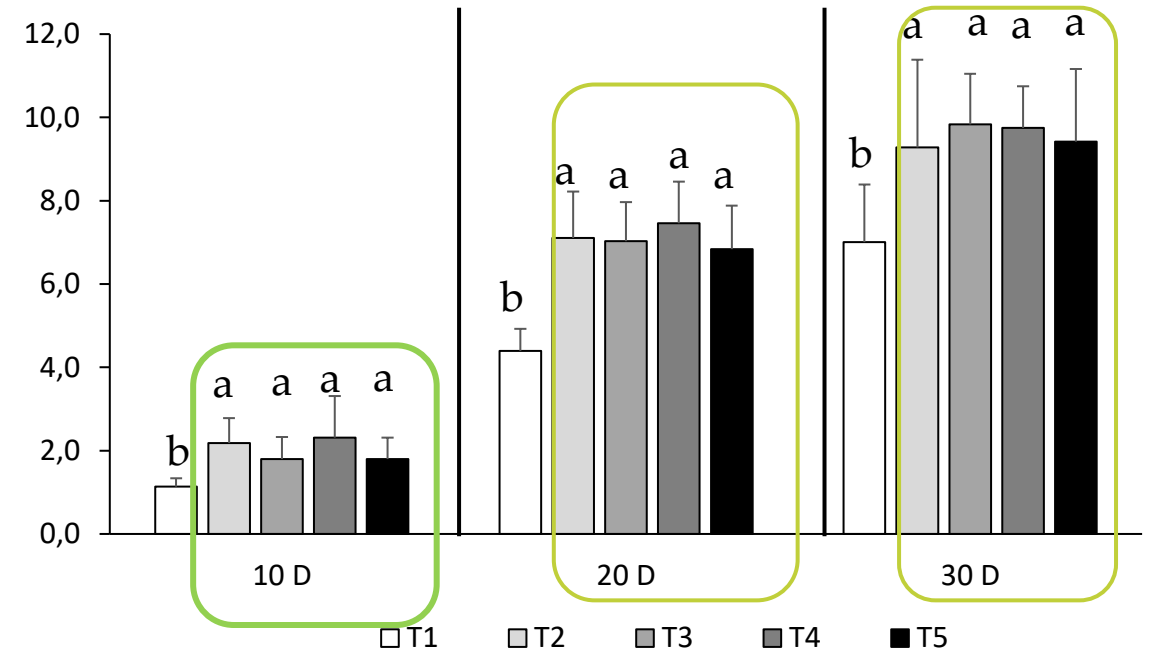
Radish

Height (cm)

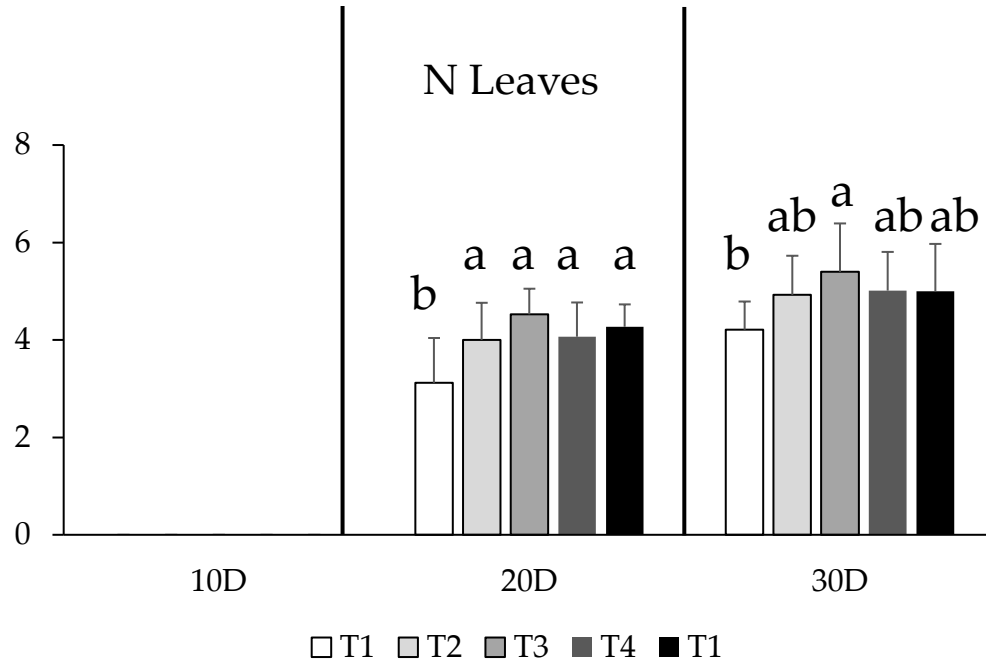


Lattuce

Height (cm)



Radish



Lattuce

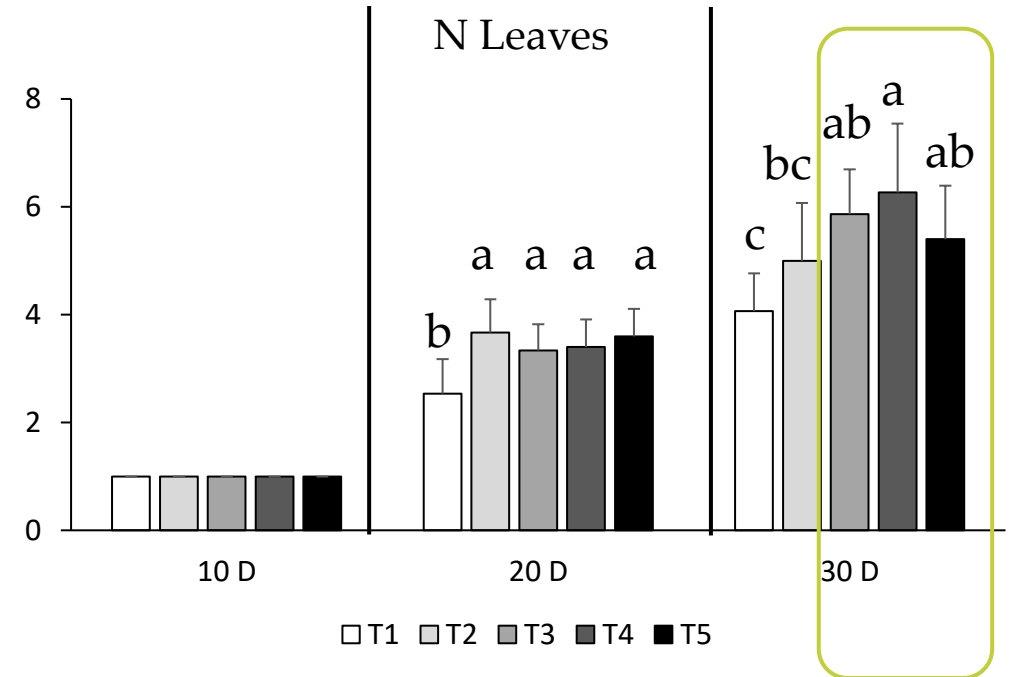
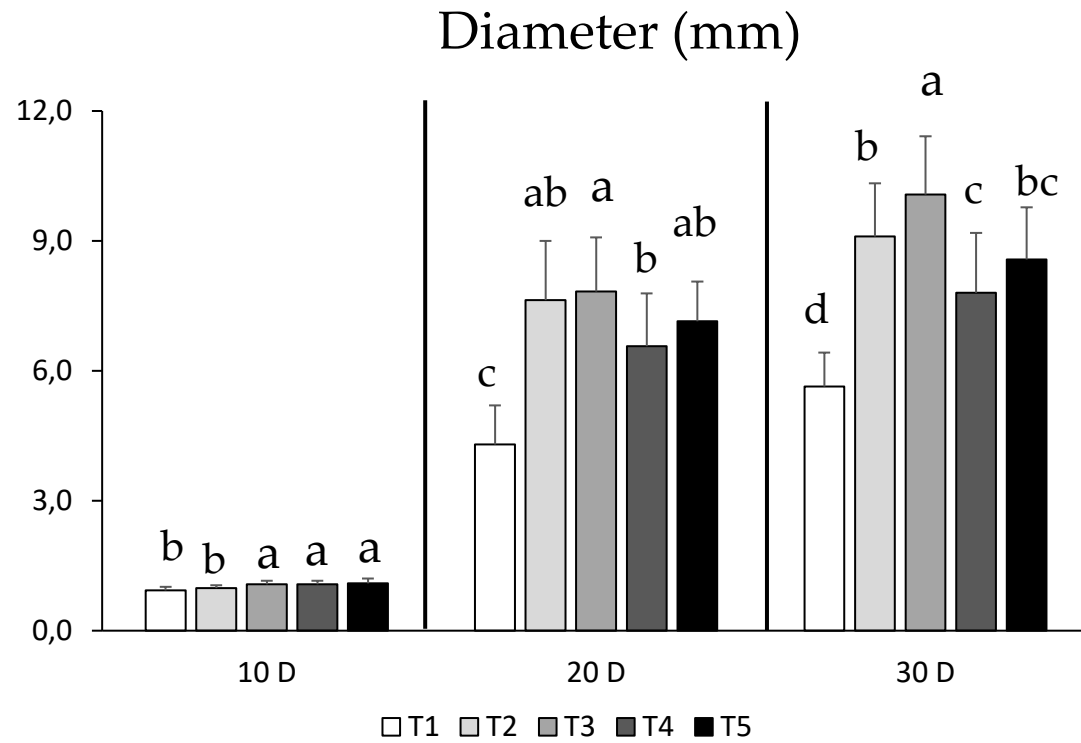
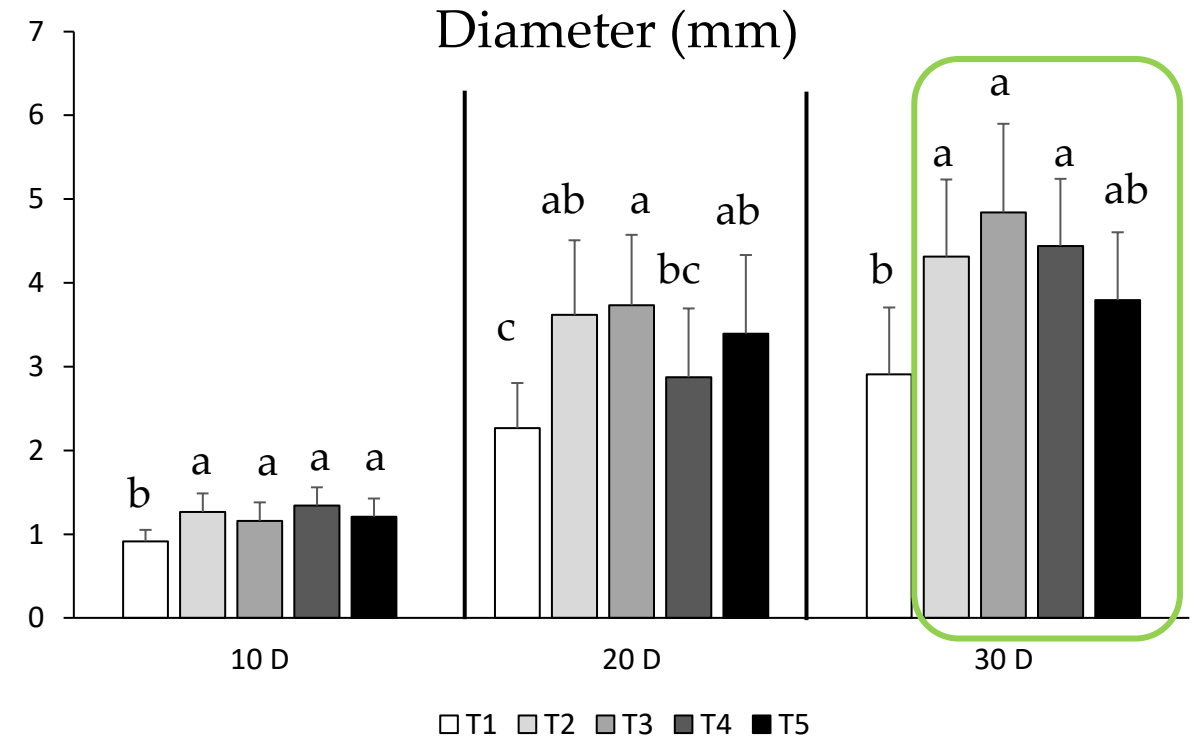


Figure: Number of leaves in Radish and lattuce at 10, 20 and 30 days. Mean values with SE are shown (n=15 lettuce and n=5 radish)

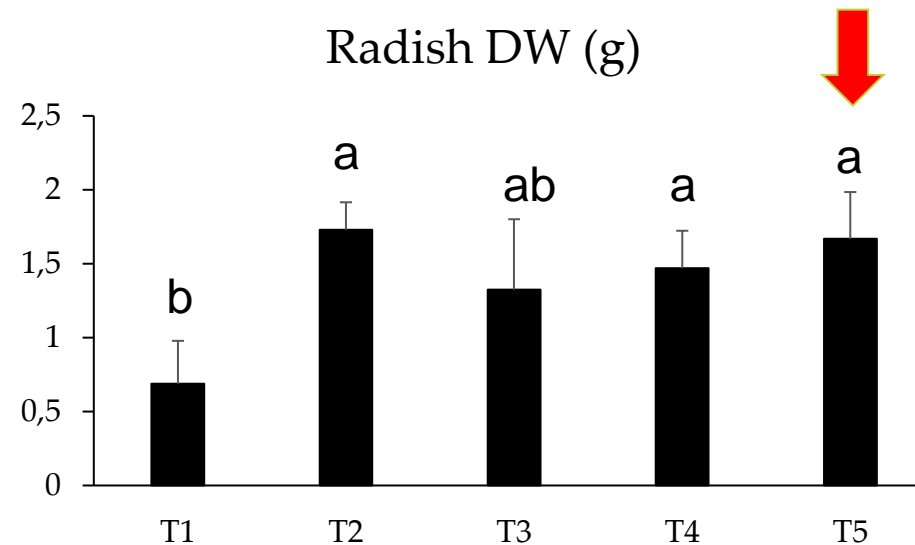
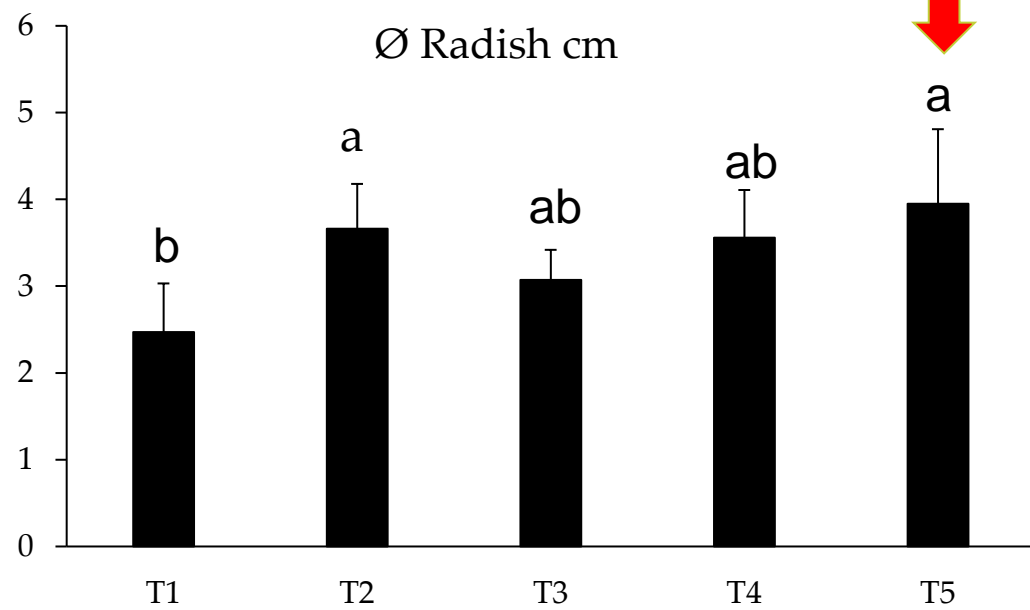
Radish



Lattuce



Radish

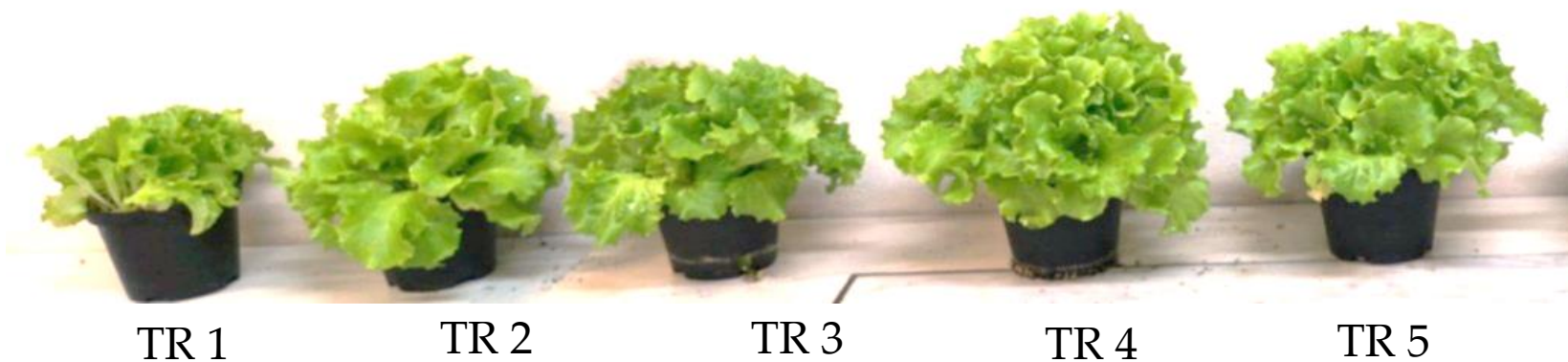
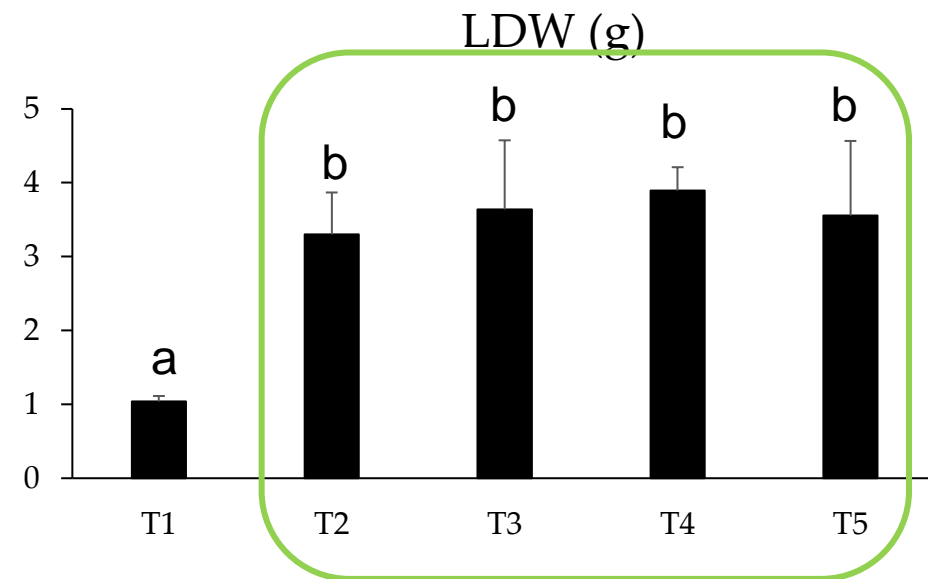
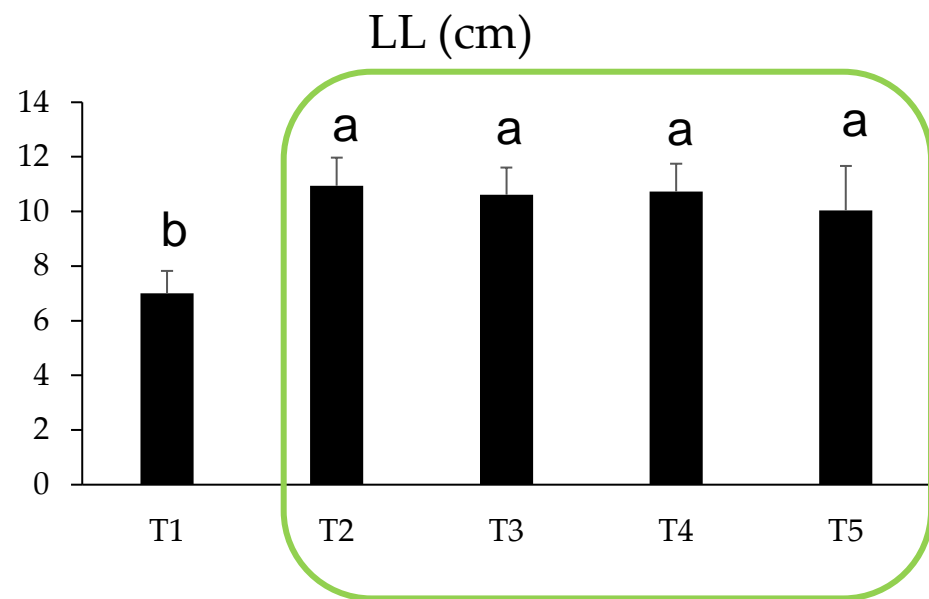


T1 T2 T3 T4 T5



Figure 1. Radish plants at the end of the experiment.

Lettuce



Conclusions:

The experimental trials conducted with struvites, produced comparable or even better results plant performance in term of growth, development, and shelf life to mineral fertilizer



Thank you