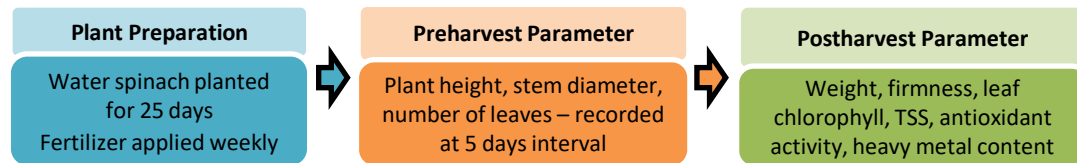


Introduction

- Coffee processing produces various by-products including coffee husk (CH) (Fig. 1).
- Reutilization of CH is valuable – rich bioactive components [1].
- Objective: investigate the potential of CH as a supplement incorporated into commercial NPK fertilizer for optimizing growth and postharvest quality of water spinach.

Methodology



Results and Discussion

Fig. 1 Coffee husk

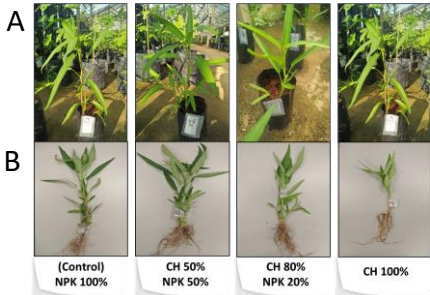


Fig. 2 (A) Water spinach plant, (B) Harvested water spinach

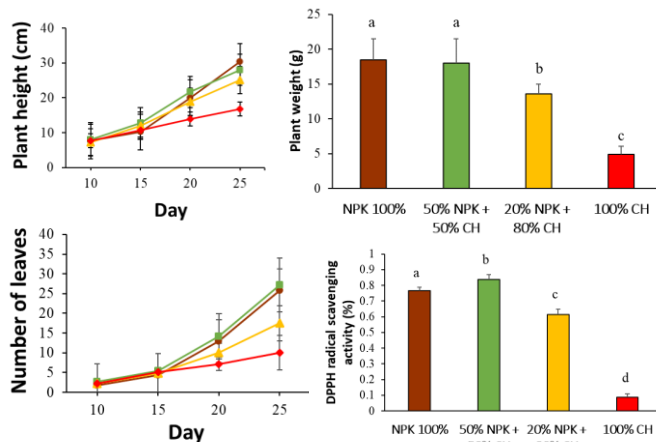


Fig. 3: Pre-harvest and postharvest quality of water spinach

- 50% NPK + 50% CH improved pre-harvest measures and antioxidant value of water spinach ($p < 0.05$).
- Plant weight, firmness, TSS, chlorophyll – similar to 100% NPK.
- Nitrogen in CH- essential for high yield and growth improvement [2].
- 100% CH - lower quality of the plant ($p < 0.05$)- possibly stunted by the phytochemicals such as chlorogenic acid [3].

Conclusion

CH can be utilized in controlled ratio to promote growth of water spinach, with 50% NPK + 50% CH as the best tested ratio.

References:

- [1] Silva MDO et al. 2020. *Molecules*, 26(1), 46.
- [2] Yousaf M et al. 2021. *Saudi Journal of Biological Sciences*, 28(5), 3021-3030.
- [3] Pandey A et al. 2000. *Biochemical Engineering Journal*, 6(2), 153-162.