

## Introduction

- *Melia volkensii* (Mukau) is an indigenous multipurpose tree
- Grows quickly in East Africa's semi-arid climates, highly drought tolerant and termites resistant.
- Supply of its products has declined over the years due reduction of natural mukau populations.
- Seeds enclosed in hard seed nuts, poor germination.
- Long process of seed extraction make conventional propagation time-consuming.
- Plant tissue culture offer true-to-type plantlets from elite trees.
- The objective of this study was to evaluate the root structure of micropropagated *M. volkensii* after planting



*Melia volkensii* tree during the dry season at Kibwezi



*Melia volkensii* fruits



Nuts

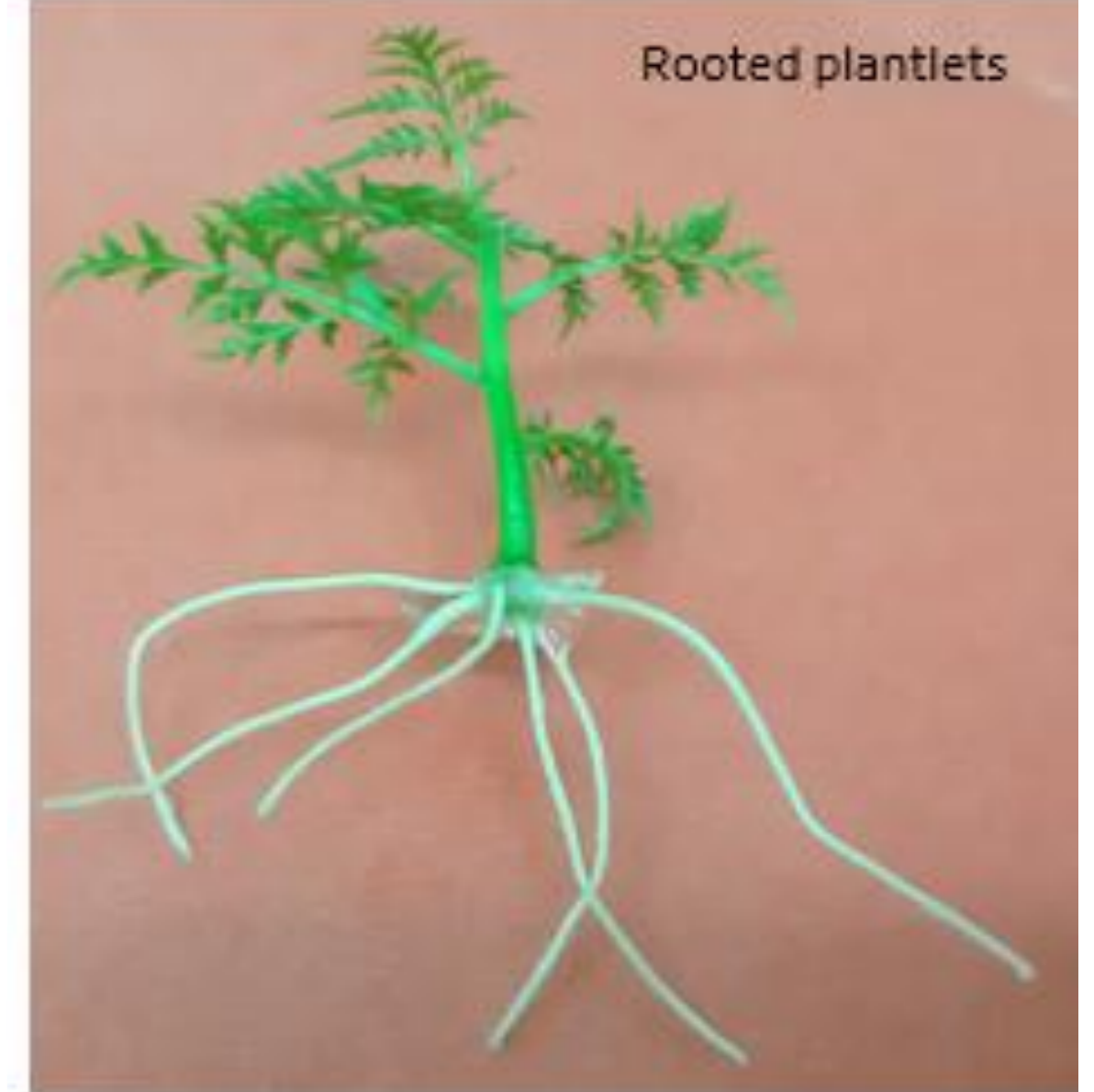
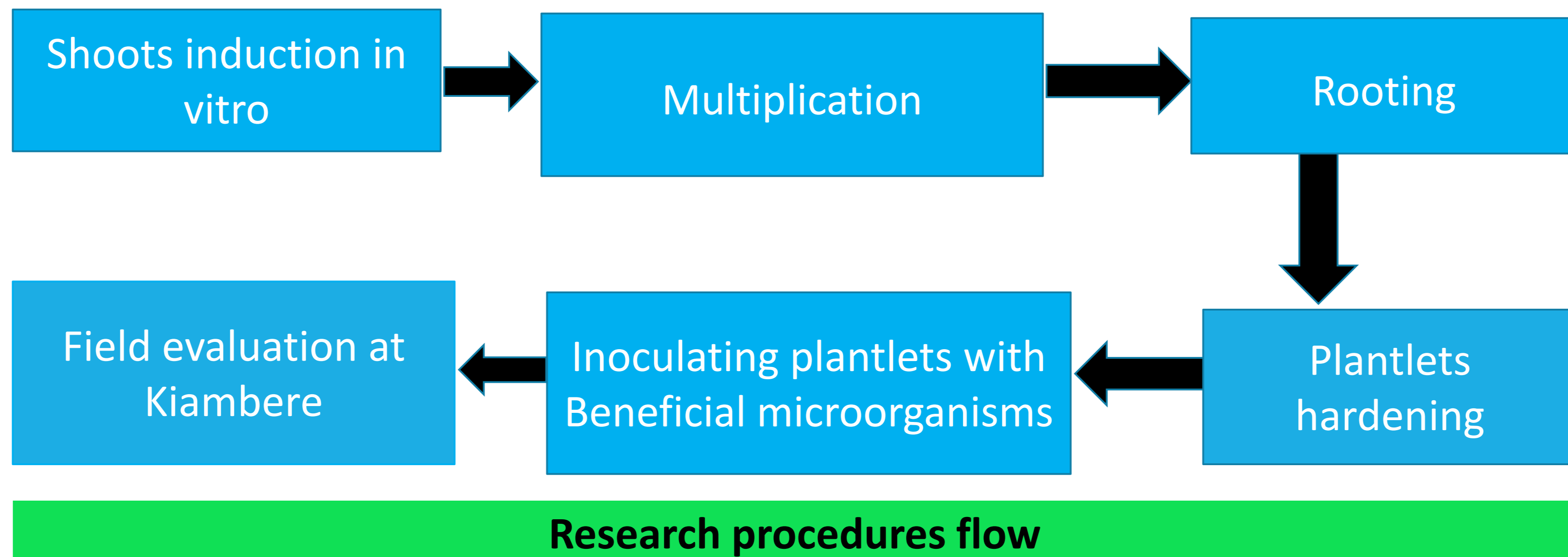


Seeds

## Methods



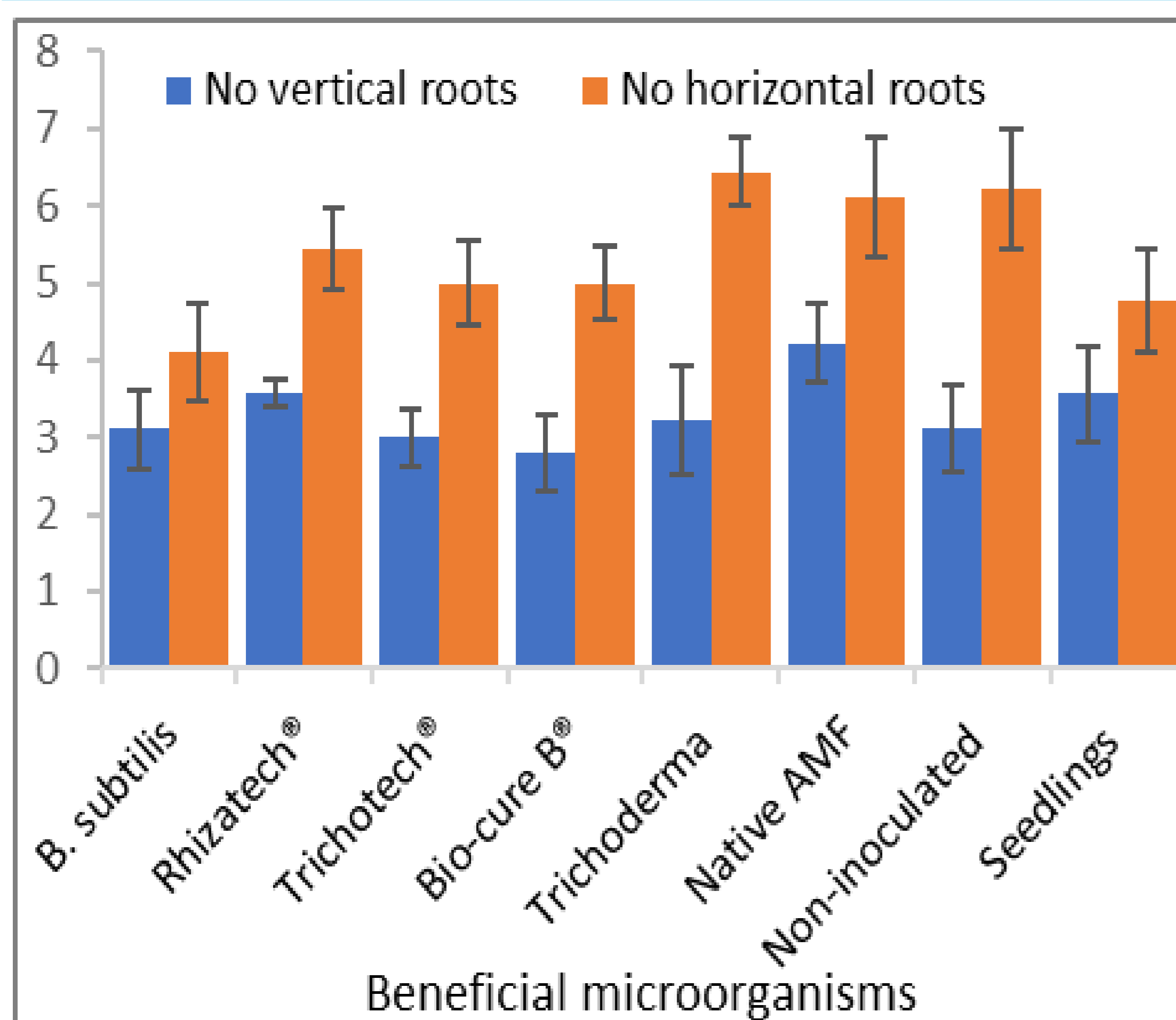
Multiple shoots



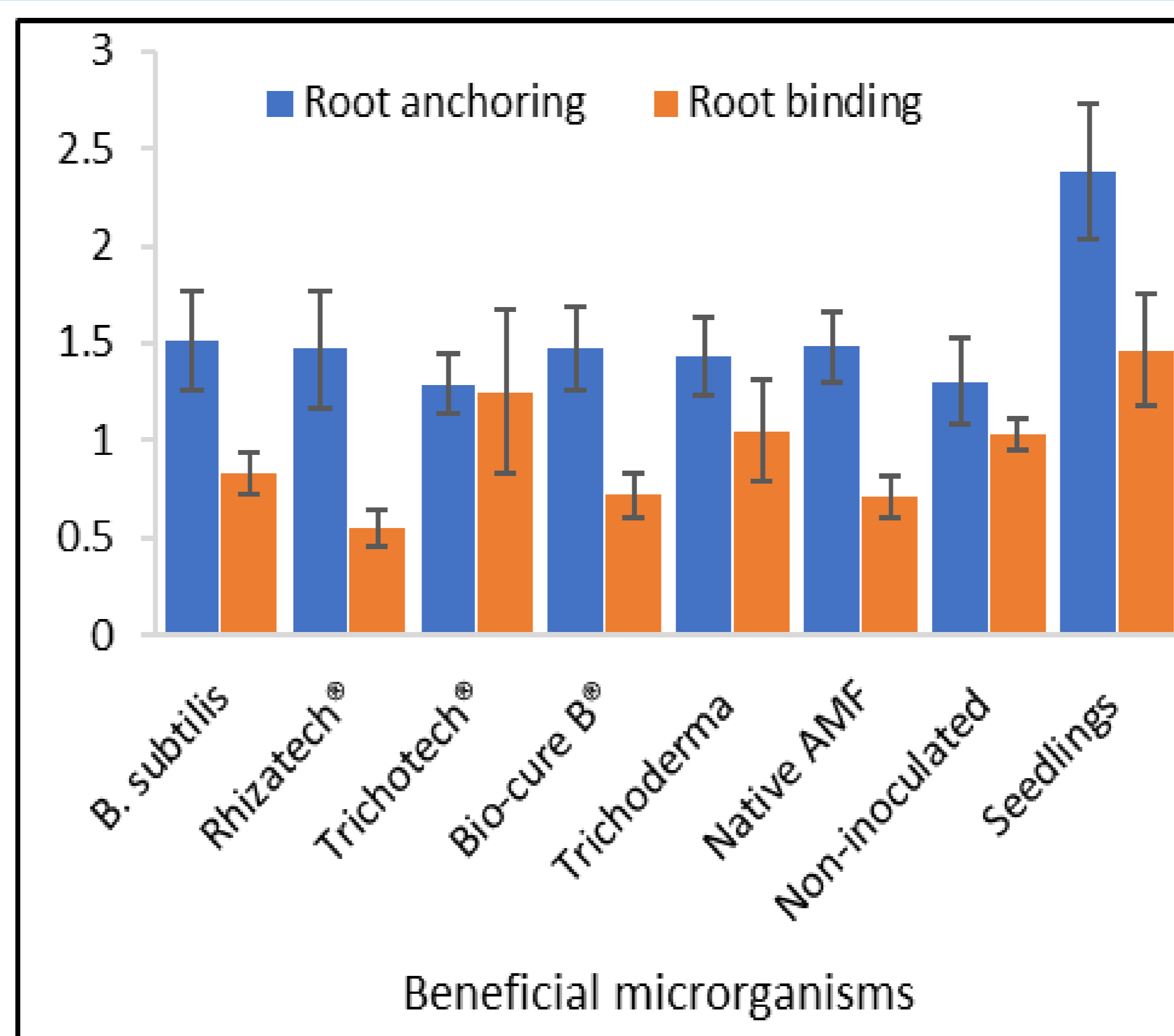
Rooted plantlets

## RESULTS

- Beneficial microorganisms improved micropropagated *M. volkensii* plantlet growth.
- Seedlings and micropropagated *M. volkensii* developed comparable vertical and horizontal roots
- Number of roots of Seedlings and in vitro showed no significant difference



Number of vertical and horizontal roots



Roots anchoring and binding indexes



*Melia volkensii* root structure 18 months after planting at Kiambere semi-arid

## Conclusion

- Micropropagated *M. volkensii* plantlets were successfully established at Kiambere
- Microorganisms improve the early growth of *M. volkensii* plantlets.
- Root anchoring and binding of micropropagated *M. volkensii* are comparable to seedlings under Kiambere climates.

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**Contacts:** constantin.dushimimana@ugent.be