

Integrated management of ginger rhizome rot using biochar and *Trichoderma* spp

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Introduction

Karnali Province was the third largest ginger producer in Nepal during the fiscal year 2021/22. The province's ginger value chain extends up to the European market. However, farmers are facing increasing challenges due to rhizome rot in ginger cultivation, leading them to consider switching to other crops. Rhizome rot is a soil and seed borne disease that has a significant economic impact, with potential losses ranging from 50-100%.

Research questions

- Does combined use of biochar and *Trichoderma* spp. significantly reduce the incidence of rhizome rot in ginger and improve the overall yield?

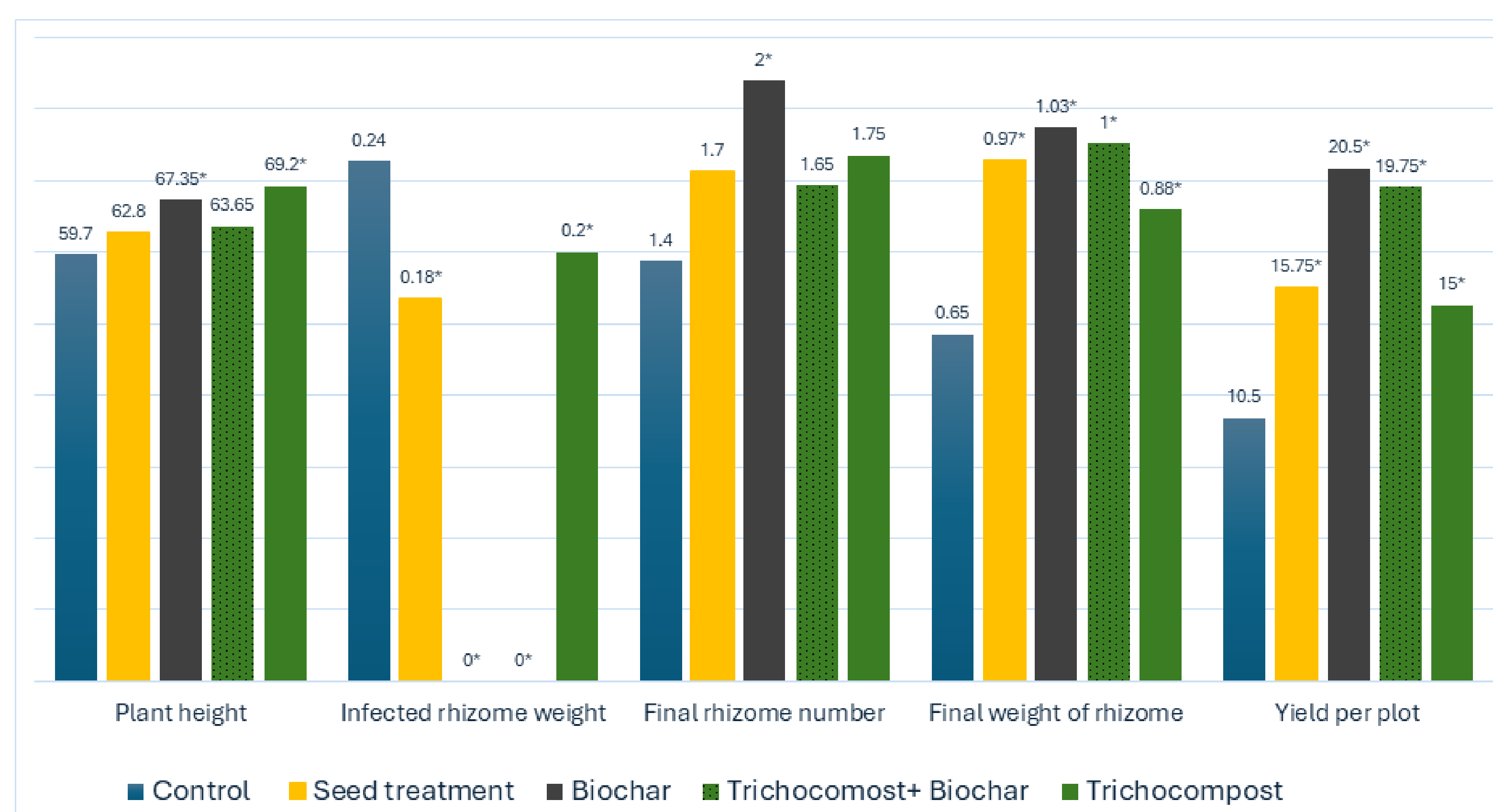
Methodology

- Action research in Bhairavi Rural Municipality-05, Dagargau, Dailekh
- RCBD design
- Shapiro Wilk, ANOVA and Tukey HSD

S.N	Treatment	Code	Description
1	Trichocompost	T1	1.5 kg in each plot of 6m ² during land preparation
2	Biochar	T2	9 kg in a plot of 6m ² during land preparation, it was slightly ground to increase surface area
3	Seed-rhizome treatment with <i>Trichoderma</i>	T3	100ml <i>Trichoderma</i> suspension (commercial name) was used alone. Seeds were dipped in the solution for 15 minutes and then placed in shade for one hour to remove excess moisture and then planted in the main fields.
4	Trichocompost + biochar	T4	1.5 kg trichocompost and 9 kg biochar in each plot of 6m ² during land preparation
5	Control	T5	No input was added

Key findings

- Among the different treatments, biochar and combined application of trichocompost and biochar decreased infected rhizome and improved rhizome weight and consequent yield in ginger.



Conclusion

The study results indicate that application of biochar, either alone or mixed with trichocompost, can decrease ginger root rot infection and improve yield.

