# Participatory Variety Selection of Improved Finger Millet (*Eleusine coracana* (L.) Gaertn.) Varieties at Debube Ari Ditrict, South Omo Zone, Southern Ethiopia

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## ABSTRACT

*Finger millet is a staple food crop in drought-prone areas of the world and is often considered a component of food security strategies in Ethiopia, however, its yield is low in the South Omo zone due to different production problems such as lack of improved varieties, lodging, and moisture stress in dry areas. A participatory selection of finger millet varieties was conducted at Kaysa, Baytesimal and Alga kebeles of Debube District, South Omo Zone during the 2019 cropping season to identify high-yielding finger millet variety/ies. The field experiments were carried out in a randomized complete block design with three replications. The combined analyses of variance results revealed that there were significant (p < 0.05) differences among varieties based on the recorded parameters except the harvest index. The maximum combined mean grain yield obtained for the varieties Tadesse, Tesema and Kako-1 (3746.75kgha$^{-1}$, 3691.94 kgha$^{-1}$, and 3593.42 kg ha$^{-1}$) respectively. While the minimum grain yield was recorded to variety, BKFM-0010 (1341.18 kgha$^{-1}$). Regarding farmers' preferences, variety Kako-1 and Tesema had higher grain yield followed by variety Tadesse. Based on data from researchers and farmers, varieties Tadesse, Tesema, and Kako-1 were the best varieties for the test agro-ecologies. Therefore, varieties; Tadesse, Tesema and Kako-1 could be recommended and popularized for use in test areas and similar agro-ecologies.*

**Keywords:**

## INTRODUCTION

*Eleusine coracana)*

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**MATERIALS AND METHODS**

**Description of study site**

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**Experimental treatments and design**

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**Participatory variety selection**

**Data collection**

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**Data Analysis**

**RESULTS AND DISCUSSION**

**The combined mean performance of finger millet varieties for growth, Yield and yield -related traits:**

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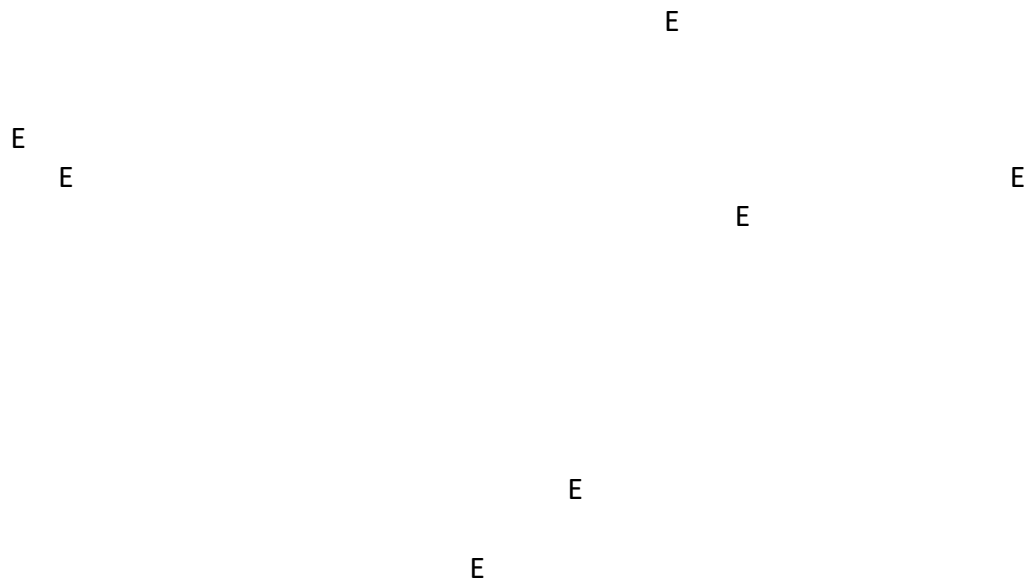
**Performance of finger millet varieties at each location for growth, yield, and yield -related traits:**

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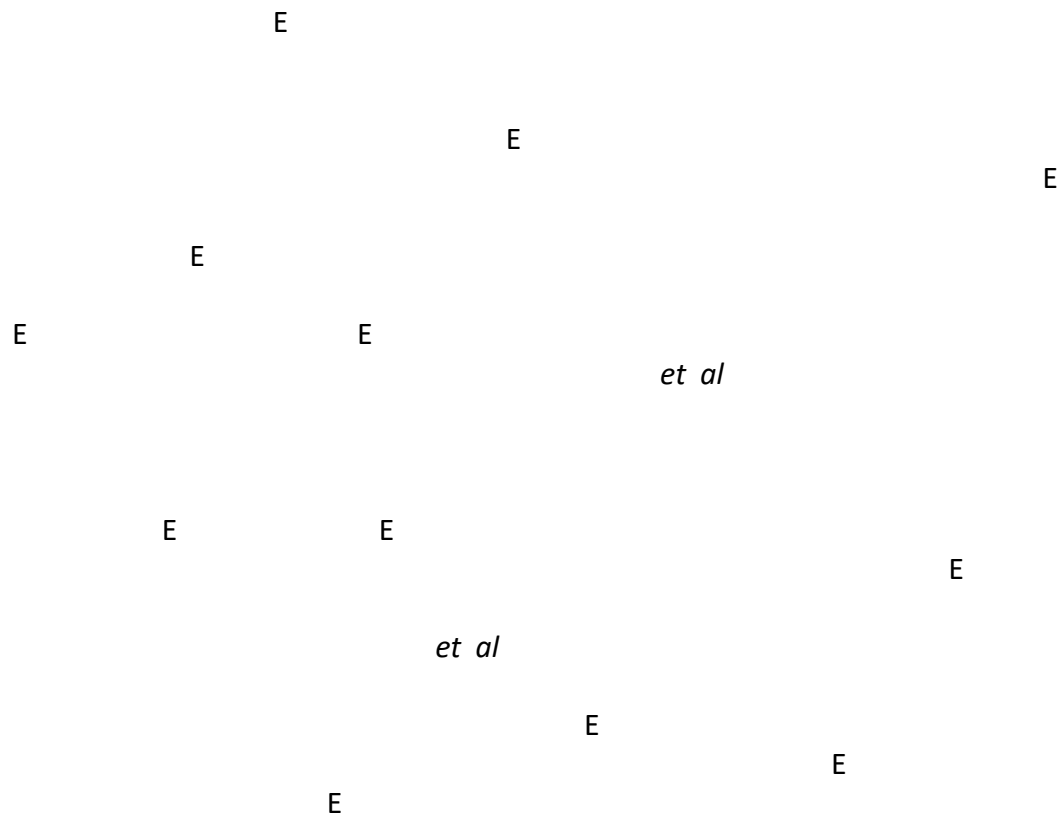
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**NB:** *indicates significance at (p < 0.05) and "ns =non-significant different.  SV=source of variation, Loc= location, DF=degree of freedom, PH=plant height, FL=finger length, FP$^{-1}$ finger per plant, PTP$^{-1}$= productive tiller per plant, DM=days of maturity, BM= biomass, GY= grain yield,                                        HI=harvest                                        index.*

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NB: DM =days to maturity, PH=plant height, Means with the same letters for traits are not significantly different at (p <0.05)

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NB: FL = number of fingers per plant, NFP$^{-1}$ = number of fingers per plant, PTP$^{-1}$ = productive tiller per plant.
Means with the same letters for traits are not significantly different at (p < 0.05)

NB: BM =biomass, GY= grain yield, HI= harvest index. Note: Means with the same letters for traits are not significantly different at (p< 0.05)

**Farmers' Evaluation Results of Tested Finger Millet Varieties:**

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*NB: SC=seed color, LR=loading resistance, FP= finger per plant, ERL= earliness (maturity)*

# CONCLUSION

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# ACKNOWLEDGMENT

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# REFERENCES

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