

Evaluation of Improved Food Barley Varieties in the New Potential Areas of East Gojam Zone, Ethiopia

Alehegn Workie Amanu* and **Mulugeta Bitew Jembre**

Debremarkos Agricultural Research Center, Ethiopian Institute of Agricultural Research, Ethiopia

Abstract

Barley is the main livelihood of farmers in East Gojam Zone particularly in Choke watershed. Choke watershed is home to more than 150,000 people living in six districts of east Gojam Zone. Smallholders in the area farm at the steep sides of the mountain, and they practice the farming in a most traditional mechanism through oxen and horse plough. The farmers have no access for the improved varieties and they use their land races. The experiment was conducted at Aneded (research station) and Sinan (Wolekie kebele) districts during 2019-2021 main cropping season with objective of selecting the best adapting and performing varieties. Twelve varieties were laid out in a Randomized Complete Block Design with three replications. Plant height, spike length, above ground biomass and yield data have been collected and analyzed using Statistical Analysis Software (SAS, 9.4). Levene's test of homogeneity showed that p-value was significant ($p < 0.00001$). As homogeneity test of variances result was significant the

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Experimental treatments, design, and management

The experimental treatments were arranged in a randomized complete block design with three replicates. The treatments included the improved food barley varieties (Amanu and Jembre) and the local variety (Daba). The experimental area was prepared by plowing and harrowing, and the plots were spaced 10 m apart. The experimental area was divided into three blocks, and the treatments were randomly assigned to the plots within each block. The experimental area was managed according to the standard agronomic practices for barley production in the region.

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Data collection

Data collection was carried out at the end of the growing season. The data collected included the yield, quality, and other agronomic parameters of the improved food barley varieties and the local variety.

Data analysis

The data were analyzed using the analysis of variance (ANOVA) technique. The differences between the treatments were tested using the Duncan's multiple range test. The data were presented as the mean and standard error of the mean.

Result and Discussion

The results of the experiment showed that the improved food barley varieties (Amanu and Jembre) performed better than the local variety (Daba) in terms of yield and quality. The improved varieties had higher yields and better quality parameters compared to the local variety.

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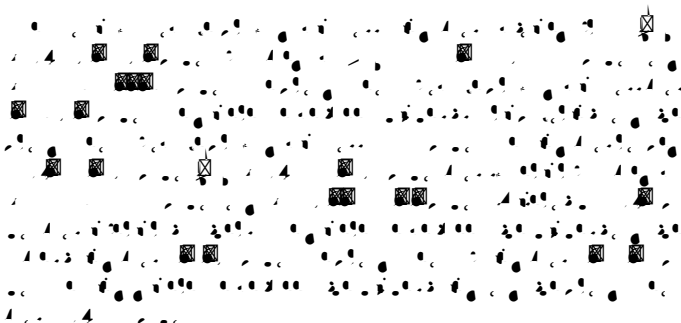
Research on-station

The research on-station was conducted in the first week of March. The data were analyzed using the analysis of variance (ANOVA) technique. The differences between the treatments were tested using the Duncan's multiple range test. The data were presented as the mean and standard error of the mean. (Table 1)

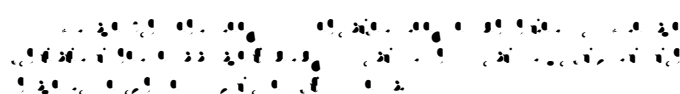
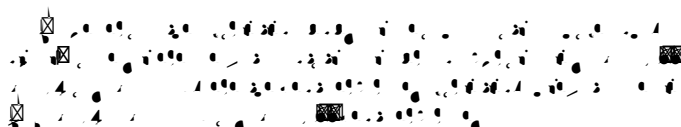
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Conclusion and Recommendation



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