Yield Stability Test of Six Sorghum Genotypes (Sorghum bicolor (L.) Moench) in GunungKidul Yogyakarta

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Abstract

Background - Sorghum was the big five crops plant in the world. Sorghum is resilient to various climate changes, easy to grow, planted anywhere, even without a lot of nutrient inputs can produce good production. However, this needs to be researched in Gunungkidul, which is famous for its drought and soil nutrient deficiencies.

Purpose - To determine the stability of 5 sorghum genotypes in various environmental conditions in Gunungkidul, a multilocation test was conducted

methodology - The test locations were 2 places in Karangmojo District and 2 places in Wonosari District with different altitudes and growing seasons. The experimental design used was group randomization with 5 replications; each 30 m2 square plot was planted with 240 plants.

Findings - The results showed that the most stable genotypes were Bioguma 1 and Gunungkidul local black bonteb sorghum with regression coefficient b = 1 and regression deviation ?ij = 0. Sorghum genotypes Plonco, Samurai, and Kawali require a favorable environment characterized by a value of b>1. On the other hand, the Red Ketan Sorghum genotype can adapt to a less favorable environment with a value of b<1. High yield potential was displayed by Bioguma 1 genotype (8.8 t/ha) and Plonco genotype (8.6 t/ha).

Originality - yield stability of local sorghum in Gunungkidul compared to new superior varieties with research locations in Gunungkidul with different places and soil nutrients has never been done and published either online or offline.

Keywords: Sorghum bicolor (L.) Moench.; stability; genotypes; seasons