

ABSTRACT

Sorghum (*Sorghum bicolor* L.) is one of the cereal food crops that has great potential to be developed in tropical and subtropical areas. However, sorghum cultivation in Indonesia is still hampered by the excessive use of chemical fertilizers, low soil fertility levels and a lack of superior varieties that are suited to local conditions. This research was carried out in the Experimental Garden and Plant Physiology Laboratory, Faculty of Agriculture, Universitas Malikussaleh. This research was carried out for 4 months from January 17, 2025 to May 25, 2025. This study used a Factorial Group Random Design (GRD) with three replications. The results of the study showed that the treatment of varieties had a very significant effect on plant height, stem diameter, number of leaves, stomata, weight of 1000 seeds, dry weight of seeds, the appearance of flag leaves, panicle length and production per Ha (ton). The treatment of LOF jakaba and PSB has a significant effect on changes in plant height, stem diameter, number of leaves, stomata, chlorophyll content, leaf area, weight of 1000 seeds, dry weight of seeds, appearance of flag leaves, panicle length and production per Ha (ton). There was an interaction between the treatment of the variety and LOF jakaba and PSB on stem diameter, chlorophyll content, dry weight of seeds, the appearance of flag leaves and production per Ha (ton).

Keywords: Bioguma 3, Microorganism, Numbu, Staple food, Super 1