

ABSTRACT

Sweet sorghum has many potentials and benefit, such as a functional food source, industrial raw material animal feed and bioethanol. The cause of the low production of sweet sorghum according to the report from the Cereal Crops Research Institute, is that although the sweet sorghum plant has long been known to farmers, the development and productivity of sweet sorghum has received less attention from the government so it is rarely found on agricultural land. The aim of this research is to determine the effects of providing biochar and NPK fertilizer and to determine the interaction between the two on the growth and production of sweet sorghum. This research was carried out at the Experimental Garden and Agroecotechnology Laboratory, Faculty of Agriculture, Malikussaleh University. This research was conducted for 4 months from May to August 2023. This research used a Factorial Randomized Block Design (RBD) with three replications. The first factor is biochar which consists of B0 (Control), B1 (3,45 kg/plot), B2 (6,9 kg/plot). The second factor is NPK fertilizer which consists of N0 (Control), N1 (5,6 g/plant), N2 (8,4 g/plant). The variables observed were plant height, stem diameter, number of leaves, leaf chlorophyll, leaf area, panicle length, weight of 1000 seeds, soluble solids, productions per ha. The results of the research showed that giving biochar had a significant effect on the variables of plant height, stem diameter and number of leaves. The best use of biochar is at B2 level. Meanwhile, the application of NPK fertilizer has a significant effect on the variables of plant height, stem diameter, number of leaves, leaf area, weight of 1000 seeds and production of tons per ha. The best use of NPK fertilizer is at the N2 level. There is an interaction between the provision of biochar and NPK fertilizer on the variables of plant height, stem diameter and number of leaves.

Keywords : Sweet Sorghum, Biochar, NPK Fertilizer, Bioguma