ABSTRACT

This study aims to determine the effect of NPK fertilizer and rice husk biochar application on the growth and yield of peanuts (Arachis hypogaea L.). The research was conducted at the Faculty of Agriculture, Malikussaleh University, from August to October 2024, using a factorial Randomized Block Design (RBD) with two factors: biochar doses (B0: control, B1: 55.5 g/plant, B2: 111 g/plant) and NPK fertilizer doses (N0: control, N1: 1.1 g/plant, N2: 1.6 g/plant, N3: 2.2 g/plant), each with three replications. The parameters observed included plant height (cm), stem diameter (cm), number of branches (branches per plant), flowering age (days after planting), number of flowers (flowers per plant), number of pods (pods per plant), pod weight (grams per plant), seed weight (grams per plant), 100-seed dry weight (grams), and yield (tons per hectare). The results showed that biochar application significantly affected plant height, stem diameter, number of branches, 100-seed dry weight, and yield. NPK fertilizer application also significantly affected plant height, stem diameter, number of branches, 100-seed dry weight, and yield. However, no interaction was found between biochar and NPK fertilizer on the growth and yield of peanuts. This study concludes that both fertilizers can separately enhance peanut productivity.

Key word: *Peanuts, NPK fertilizer, Biochar, Growth, Yield*