

ABSTRACT

Shallot is an important horticultural crop with high economic value and broad development potential. However, the continuous application of inorganic fertilizers has contributed to declining soil quality, reduced soil fertility, and disruption of soil microbial ecosystems, which ultimately lowers land productivity. The use of organic fertilizers and suitable planting media is considered an alternative approach to support sustainable shallot cultivation. Chicken manure can improve soil nutrient availability, while rice husk charcoal can enhance water retention in the growing medium, which is essential for shallot growth due to its sensitivity to drought conditions. This research was conducted to evaluate the effects of chicken manure, rice husk charcoal, and their interaction on the growth and yield of shallots. The experiment was carried out at the experimental garden of the Faculty of Agriculture, Malikussaleh University, from March to May 2026. This research used Randomized Block Design (RBD) two factor with three replications. The first factor consisted of chicken manure at three levels: 0, 150, and 250 g/polybag. The second factor consisted of rice husk charcoal at three levels: 0, 40, and 80 g/polybag. The findings indicated that chicken manure significantly improved several growth and yield parameters, including plant height, leaf number, tiller number, fresh bulb weight, dry bulb weight, root length, root weight, and root volume. Although treatments of 150 g/polybag and 250 g/polybag produced statistically similar results, the 150 g/polybag dose was considered more efficient and therefore recommended. Rice husk charcoal also significantly influenced plant height, tiller number, fresh bulb weight, and root characteristics, with the best performance observed at 80 g/polybag. Significant interaction effects between both treatments were found in plant height, dry bulb weight, and root parameters. The combination of 150 g/polybag chicken manure and 80 g/polybag rice husk charcoal produced the best overall performance for shallot growth and yield.

Keywords: Sustainable cultivation, tuber weight, soil aeration, soil porosity, varietas tajuk