

ABSTRACT

Shallot (*Allium cepa* L.) is one of the important vegetable commodities with high economic value widely used as a cooking spice and traditional medicine. This study aimed to determine the effect of NPK fertilizer and Moringa leaf Liquid Organic Fertilizer (LOF) on the growth and yield of shallots. This research was conducted at the Experimental Garden and Plant Physiology Laboratory, Faculty of Agriculture, Malikussaleh University, from January to March 2026. The research used a Randomized Block Design in a factorial arrangement with 3 replications. The first factor was NPK fertilizer dose: N0 = 0 g/polybag, N1 = 3.5 g/polybag, N2 = 4 g/polybag. The second factor was Moringa leaf LOF concentration: P0 = 0 ml/L water, P1 = 130 ml/L water, P2 = 150 ml/L water. The results showed that NPK fertilizer treatment had a highly significant effect on root length and root volume of shallots. Moringa leaf LOF treatment and the interaction between the two factors did not show a significant effect on all observed variables.

Keywords: bulb formation, horticulture, root system, plant nutrients.