

ABSTRACT

Tomato (*Solanum lycopersicum* L.) is one of the horticultural commodities whose demand continues to increase due to its wide utilization as a vegetable, cooking ingredient, and medicinal resource. Tomato production in Indonesia has fluctuated, partly due to low soil fertility and limited nutrient availability, which adversely affect plant growth. Improving soil fertility through fertilization using organic and inorganic inputs, such as horse biourine and NPK fertilizer, is expected to enhance tomato growth. This study aimed to evaluate the response of horse biourine and NPK fertilizer on the growth of tomato plants (*Solanum lycopersicum* L.). The experiment was arranged in a two-factor Randomized Block Design (RBD) with three replications. The first factor was horse biourine application consisting of three levels: K0 (0 ml L⁻¹), K1 (600 ml L⁻¹), and K2 (900 ml L⁻¹). The second factor was NPK fertilizer application consisting of three levels: N0 (0 g plant⁻¹), N1 (32 g plant⁻¹), and N2 (40 g plant⁻¹). The results showed that horse biourine significantly affected plant height at 28–49 days after planting (DAP), stem diameter at 28 and 35 DAP, leaf chlorophyll content at 28 DAP, and flowering time. NPK fertilizer application significantly affected plant height at 28, 35, and 49 DAP, with the application of 40 g plant⁻¹ as the best treatment for promoting vegetative growth. A significant interaction between horse biourine and NPK fertilizer was observed on the average plant height of tomato plants at 28–49 DAP.

Keywords: Biourine, Chlorophyll content, NPK fertilizer, Vegetative growth,