

ABSTRACT

Lettuce (*Lactuca sativa* L.) is one of the most popular vegetables in the world. Red lettuce production fluctuated from 2017 to 2020. One of the causes of production fluctuations in red lettuce plants is the use of inorganic fertilizers in high concentrations. Efforts that can be made to overcome these fluctuations are by using liquid organic fertilizer (LOF) from green vegetable waste and NPK fertilizer with the right concentration and dosage. This study aims to determine the effect of giving POC from green vegetable waste and NPK fertilizer on the growth and yield of red lettuce plants. This research was conducted in the Experimental Garden and carried out in the Laboratory of the Faculty of Agriculture, Malikussaleh University, this research was conducted from January to March 2025. This study used a Factorial Randomized Group Design (RBD) with three replications. The first factor is Green Vegetable Waste Liquid Organic Fertilizer consisting of (L0) 0 ml/l, (L1) 10 ml/l, (L2) 20 ml/l, (L3) 30 ml/l. The second factor is NPK Fertilizer consisting of (N0) 0 g/plant, (N1) 1.75 g/plant, (N2) 2.25 g/plant. The results showed that the use of liquid organic fertilizer of green vegetable waste gave a real effect on the variables of leaf height at 28 DAP, increase in the number of leaves at 21 DAP, leaf length at 28 DAP, and gave a very real effect on the variables of leaf height at 35 DAP, increase in the number of leaves at 28-35 DAP, leaf length, leaf area, plant fresh weight, root length, root volume, production. The provision of NPK fertilizer has a very significant effect on the variables of plant height, increase in the number of leaves, leaf length, leaf area, plant fresh weight, root length, root volume, and production. There is an interaction between the treatment of liquid organic fertilizer of green vegetable waste and NPK fertilizer on the variable number of leaves at 35 DAP, leaf area, plant fresh weight, root length, root volume, and production.

Keywords: nutrient, horticulture, organic, inorganic.