

ABSTRACT

Mohamad Nalendra Agung Permana Win Syahputra. 212354211008. 2025. "Testing the Effectiveness of Using Liquid Moringa Leaf Organic Fertilizer on Growth and Yield of Cauliflower (*Brassica oleracea* var. botrytis L.)". Thesis, Agrotechnology Study Program, Faculty of Agriculture. Supervised by Nanik Lutfiyah, S.Si., M.Si. and Dwi Wulandari, S.P., M.P. Darul 'Ulum University Jombang.

The agricultural sector plays an important role in supporting food security and the national economy. However, farmers' high dependence on chemical fertilizers causes problems such as increased production costs, land degradation, and environmental pollution. A potential alternative is the use of liquid organic fertilizer made from Moringa oleifera leaves, which are rich in macro nutrients and bioactive compounds. This study aims to determine the effectiveness of liquid organic fertilizer made from Moringa leaves on the growth and yield of cauliflower (*Brassica oleracea* var. botrytis L.) and to determine the optimal dosage that provides the best response.

The study was conducted on experimental rice fields in Mojosarirejo Village, Kemlagi Subdistrict, Mojokerto Regency from April to June 2025. The design used was RAK with six treatments, namely control without fertilizer, NPK 20 g/L, and moringa oleifera leaf liquid organic fertilizer at doses of 100 ml/L, 200 ml/L, 300 ml/L, and 400 ml/L. Each treatment was repeated four times with a total of 240 plants. The parameters observed included plant height, number of leaves, fresh weight, and crop weight.

The results of the study indicate that the application of moringa oleifera leaf liquid organic fertilizer has a significant effect on all growth parameters and yields of cauliflower plants. The treatment with a dose of 300-400 ml/L produced results that were close to or even comparable to NPK fertilizer, both in terms of plant height, number of leaves, and crop weight. Thus, moringa oleifera leaf liquid organic fertilizer has been proven to increase plant productivity while also being an environmentally friendly alternative fertilizer.

The conclusion of this study is that moringa leaf liquid organic fertilizer effectively enhances the growth and yield of cauliflower. The use of a dose of 300-400 ml/L is recommended as the optimal dose.

Keywords: Cauliflower, Liquid Organic Fertilizer, Moringa Leaves