

## ABSTRACT

Cauliflower (*Brassica oleraceae* L.) is a vegetable plant from the *Cruciferae* family. Efforts to increase cauliflower production include organic and anorganic fertilization. The purpose of this study was to determine the effect of organic vermicompost and anorganic potassium fertilizer applications and to determine the interaction both of them on the growth and yield of cauliflower plants. This research was conducted in Pulo Rungkom Village, Dewantara District, North Aceh and also conducted in the Agroechotechnology Laboratory and Soil Science Laboratory, Faculty of Agriculture, Malikussaleh University. This research was conducted for four months from November 2024 to February 2025. This research used a Factorial Randomized Block Design with three replications. The first factor is organic vermicompost consisting of (C0) 0 kg/plot, (C1) 0.5 kg/plot, (C2) 1 kg/plot. The second factor is inorganic potassium fertilizer consisting of (K0) 0 ml/liter of water, (K1) 3 ml/liter of water, (K2) 6 ml/liter of water. The results showed that the provision of organic vermicompost fertilizer significantly affected the variables of plant height, number of leaves, leaf length, leaf width, wet stalk weight, flower diameter, flower weight and production ton/ha. The provision of inorganic potassium fertilizer significantly affected the variables of plant height, number of leaves, leaf length, leaf width, wet stalk weight, flower diameter flower weight and production ton/ha. There was no interaction between the provision of organic vermicompost fertilizer and inorganic potassium fertilizer on the growth and yield of cauliflower plants.

Keywords: Cauliflower, Vermicompost and Potassium