

## ABSTRACT

Pakcoy is a plant that can be cultivated and grows both in the lowlands and highlands. In Indonesia, pakcoy production is still relatively low, so pakcoy productivity needs to be increased. Efforts to increase pakcoy production in Indonesia include using nanotechnology organic fertilizer and planting media composition. This research aimed to determine the effect of applying nano fertilizer and different planting media to optimally influence the growth and yield of pakcoy plants. This research was carried out in experimental gardens and laboratories at the Faculty of Agriculture, Malikussaleh University. This research was carried out from August to September 2023. The method used in this research, using a factorial Randomised blok design (RBD) consisting of two factors.. The first factor was nano technology organic fertilizer (N) consisting of 4 levels, namely: N0 0 ml/l, N1 1 ml/l, N2 3 ml/l, N3 6 ml/l. The second factor was the composition of the planting medium (P) consisting of 3 levels, namely: P1 cow manure + soil (1:1), P2 cocopeat + soil (1:1), P3 biochar + soil (1:1). The variables observed were plant height, leaf length, number of leaves, leaf area, wet weight, dry weight, harvest index and root length. The research results showed that the application of nanotechnology organic fertilizer and the composition of the planting media had an effect on the growth and yield of pak choy plants. The best treatment was the application of nanotechnology organic fertilizer with a concentration of N2 (3 ml/l), in the planting media composition treatment the best results were obtained in the P2 (cocopeat: soil) treatment. There is an interaction between nanotechnology organic fertilizer treatment and the composition of the planting media. This could be seen in the variables of plant height, number of leaves, wet weight and dry weight. For further research, it was recommended to use nanotechnology organic fertilizer with a concentration of 3 ml/liter and cocopeat + soil as a planting medium. , this was because this treatment affects the growth and yield of pak choy plants.

**Keywords:** Cocopeat, Nano, Soil.