Response of Photoperiode and Increased Concentration KNO_3 on *In Vitro* Microtuberization of Potato Granola Kembang Cultivar
Supervised by Ir. Djenal, MP

Jessyca Putri Choirunnisa
Crop Production Technology
Majoring of Agricultural Production

ABSTRACT

Potatoes (*Solanum tuberrosum* L.) is carbohydrate source plants that are developed as an alternative to food diversification. However, the availability of quality potato seeds is very limited because the level of attack by bacteria and viruses is quite high. The demand of potatoes seeds can be fulfilled with developing microtuber potatoes by the application of plant tissue culture. The experiment was conducted by regulate photoperiode and increase concentration KNO_3 to more quickly in the forming of microtuber potatoes. This research was carried out from September 2018 to December 2019 at Tissue Culture Laboratory, State Polytechnic of Jember. The design was arranged in a factorial Completely Randomized Design with 9 treatment combinations and 3 replications. First factor was photoperiode with time regulate (8; 12; and 16 hours/24 hours). Second factor was increased concentration KNO_3 consists of 3 levels (1.900; 2.850; and 3.800 mg/l). The result showed that combination of treatment 8 hours/24 hours photoperiode and 3.800 mg/l KNO_3 gave the best results in the present parameters of microtuber which could give rise to the fastest microtuber. Using 16 hours/24 hours photoperiode is the best treatment for tuber diameter and tuber weight because microtuber is produced has the highest diameter and weight. Concentration of 1.900 mg/l KNO_3 gives the best results for parameters microtuber number with generating the most number of microtuber.

Keywords : *Microtuber, KNO_3, Photoperiode, Potato*