

**EFFECT OF ECO-ENZYME CONCENTRATION AND FREQUENCY  
DRIP FERTIGATION ON PEST POPULATIONS AND NATURAL  
ENEMIES OF SHALLOTS (*Allium ascalonicum*)**

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**ABSTRACT**

Problem in shallots (*Allium ascalonicum*) cultivation is decreasing yield due to pest attack. The purpose of this study was to determine the interaction between the application of eco-enzyme and the frequency of application of liquid fertilizer to the pest population and natural enemies. The research was conducted at the Experimental Garden of UPN “Veteran” Yogyakarta Sempu, Wedomartani, Ngemplak, Sleman, Yogyakarta. The research was arranged in a split plot design which was repeated 3 times. Main Plot consists of fertilization frequency 1 time a day, 2 times a day and 3 times a day. The subplot consisted of no eco-enzyme, 1 mL/L eco-enzyme concentration, 2 mL/L eco-enzyme concentration. The method used for data collection is direct observation of plants and *yellow sticky trap* observations. Each experimental plot observed 3 sample plants. Parameters observed were pest population, natural enemy population and intensity of attack by pests of *S. litura*, *S. exigua*. The results showed that there was an interaction between the pest population of *N viridula* L at 56 DAP (Day After Plant) and the intensity of attack on *S. exigua* at 35 DAP. The lowest population of *N. viridula* L was in the treatment with a frequency of fertilization 2 times per day with an eco-enzyme concentration of 2 mL/L, and the lowest intensity of *S. exigua* attack was treated with a frequency of fertilization 3 times a day without eco-enzyme. The concentration of eco-enzyme 2 mL/L caused the lowest pest population in *Bactrocera* spp. plants at 21 DAP, *N viridula* L at 14 DAP, and the lowest pest intensity of *S. litura* at 35 DAP, 42 DAP, 49 DAP, and 56 DAP. HST. The frequency of fertilization 2 times a day caused the lowest population of *N. viridula* L in plants aged 42 DAP and the lowest intensity of *S. litura* attack at the frequency of fertilization 1 time per day for plants aged 42 DAP and 49 DAP. The highest natural enemy population of *S. pussillus* was at the frequency of fertilization 2 times a day or 3 times a day for plants aged 14 DAP and the highest population of *C. sempunctata* was at the frequency of fertilization 3 times per day for plants aged 14 DAP.

Keywords: Shallots, ecoenzyme, pests, natural enemies