Response of Maize (Zea mays L.) Growth and Yield to the Application of Liquid Organic Fertilizer Derived from Golden Apple Snail (Pomacea canaliculata L.) and Plant Growth-Promoting Rhizobacteria (PGPR)

Supervised by: Tirto Wahyu Widodo S.P., M.P.

Keylin Rosa Putri Kinanti
Study Program of Food Crop Production Teknology
Department of Agricultural Production

ABSTRACT

Corn production in Indonesia continues to increase every year, while farmers remain dependent on inorganic fertilizers, which tend to be scarce and expensive, leading to a decline in the productivity of feed corn. Therefore, one approach that can be taken to increase corn productivity is through the use of liquid organic fertilizer (POC) derived from golden snails and PGPR (Plant Growth-Promoting Rhizobacteria). This study aims to examine the effect of applying liquid organic fertilizer derived from golden snails and Plant Growth-Promoting Rhizobacteria on the growth and yield of corn plants, as well as to determine the optimal concentration for both treatments. The study was conducted in Sumberlangon Village, Patrang Subdistrict, Jember Regency (Lat: -8.141347, Long: 113.697525, 146 m above sea level) from July to October 2025. The experiment was designed using a factorial randomized block desig with two factors and three replications. The first factor was the concentration of golden snail, consisting of 0 $ml.l^{-1}$, 20 $ml.l^{-1}$, and 30 $ml.l^{-1}$. The second factor was the concentration of Plant Growth-Promoting Rhizobacteria, consisting of 0 $ml.l^{-1}$, 50 $ml.l^{-1}$, and 60 $ml.l^{-1}$. The results showed that the 20 $ml.l^{-1}$ golden apple snail treatment had a highly significant effect on plant height at 42 days after sowing (214.8 cm), dry cob weight per sample (217.7 g), and dry seed weight (318.3 g). The 50 $ml.l^{-1}$Plant Growth-Promoting Rhizobacteria treatment had a highly significant effect on the dry weight of the cob per sample (218.0 g). Based on the research findings, the use of golden snail at a concentration of 20 $ml.l^{-1}$ and Plant Growth-Promoting Rhizobacteria at a concentration of 50 $ml.l^{-1}$ has the potential to increase the growth and yield of corn crops.

Keywords:*corn productivity, liquid organic fertilizer, rhizobacteria*