

## ABSTRACT

Glutinous corn production (*Zea mays ceratina*) is often hampered by suboptimal fertilization and low soil fertility. To overcome suboptimal fertilization and low soil fertility, innovations in sweet corn cultivation techniques are needed, one of which is the use of photosynthetic bacteria (PSB), which can be used as an alternative to help plant growth and the use of NPK fertilizer to meet the macro nutrient requirements of sweet corn plants. This research was conducted at the Experimental Garden and Laboratory of the Faculty of Agriculture, Malikussaleh University. This research was conducted from February to April 2025. The objective of this study was to determine the effect of photosynthetic bacteria and pearl NPK fertilizer application, as well as their interaction, on the growth and yield of corn plants. The research method used was a 2-factorial Randomized Block Design (RBD) with 3 replicates. The photosynthetic bacteria (P) factor consisted of 3 levels: P0 (control), P1 (10 ml/liter), P2 (20 ml/liter). The pearl NPK fertilizer (N) factor consisted of 4 levels: N0 (control), N1 (3.9 g/plant), N2 (4.7 g/plant), N3 (5.5 g/plant). The variables observed were the vegetative and generative phases of the plants. The results of this study indicate that the application of photosynthetic bacteria has a significant effect on the variables of plant stem diameter at 14 days after planting, leaf chlorophyll, cob weight without husk, and number of seeds per cob row, with the best treatment being P2, i.e., 20 ml/liter. Meanwhile, the application of Mutiara NPK fertilizer showed significant results on almost all variables in the vegetative and generative phases of the plant, with the best treatment being N3 at 5.5 g/plant. There was an interaction between photosynthetic bacteria and Mutiara NPK fertilizer on the variables of male flowering age and cob length with husks

**Keywords:** *Glutinous Corn, Photosynthetic Bacteria and NPK Fertilizer.*