ABSTRACT

Tomato (*Solanum lycopersicum* L.) is a horticultural plant that belongs to the group of shrub-shaped annuals and the Solanaceae family. One of the causes of declining tomato production in Aceh province is the decline in land productivity due to lack of nutrients in the soil and cultivation techniques that are still not appropriate. One of the efforts to increase the productivity of tomato plants is by adding organic matter as fertilizer as well as soil improver, namely biocompost and using PGPR (*Plant Growth Promoting Rhizobacter*) as a biological fertilizer. The purpose of this study was to determine the effect of biocompost and PGPR on the growth and yield of tomato plants. This research was conducted in the Experimental Garden of the Faculty of Agriculture, Malikussaleh University and in the Agroecotechnology Laboratory, Faculty of Agriculture, Malikussaleh University. This research was conducted from January to March 2024. This research used two factors Randomized Block Design with three replications. The way of factor is biocompost which consisted of three levels, namely B0 (0 tons/ha), B1 (5 tons/ha) and B2 (15 tons/ha). The second factor was PGPR concentration which consisted of 3 levels namely P0 (0 ml/L), P1 (30 ml/L), P2 (45 ml/L). The results showed the application of biocompost fertilizer had a significant to very significant effect on the variables of plant height, stem diameter, chlorophyll content, flowering age, fruit weight per unit, fruit weight per plant and fruit diameter. The application of PGPR concentration had a significant to very significant effect on the variable of plant height, stem diameter, number of fruits per plant, total soluble solids and fruit weight per plant. However, there was no interaction between biokompost and PGPR treatments.

Keywords: concentration, dose, effect, variable, variety Servo F1