

## ABSTRACT

Tomato (*Lycopersicum esculentum* Mill.) is one type of fruit vegetable, very good to be developed because it has high economic value. This research aimed to determine the effect of organic fertilizer treatment on the growth and quality of yield of three varieties of tomato plants. This research was conducted in Cot Geurundong Village, Jeumpa District, Bireuen Regency at an altitude of 650 meters above sea level. Laboratory analysis was carried out at the Agroecotechnology Laboratory, Faculty of Agriculture, Universitas Malikussaleh. This research was conducted from August to December 2024. This research used a Randomized Block Design (RBD) with two factors tested. The first factor was the fertilizer dose consisting of 4 levels, namely P0 (no fertilizer), P1 (300 g/plant), P2 (600 g/plant), and P4 (900 g/plant). The second factor was the variety consisting of 3 levels V1 (Servo F1 variety), V2 (Gustavi F1 variety) and V3 (Lokal Lara variety). The results of the research showed that the use of organic fertilizer increases tomato crop yields in terms of fruit weight per plant in harvests 3, 4, and total, as well as overall production. The best results were obtained with a dose of 300 grams/plant, yielding up to 34,96 tons/ha. The use of varieties improved tomato plant growth and yield in terms of flowering age, number of fruits per plant at harvest 2, harvest 3, harvest 4, and total, total soluble solids, pH, and production. The best results were obtained with the Lokal Lara variety, yielding up to 35,87 tons/ha. There was an interaction between variety and organic fertilizer on tomato plant growth and yield in terms of plant height at 14 day after planting (DAP) to 49 DAP, number of leaves at 14 DAP, 21 DAP, and 42 DAP, number of fruits per plant at harvest 1, harvest 2, harvest 4, and total, fruit weight per plant at all harvest ages and total, fruit diameter, total soluble solids, and production. The best results were obtained with the organic fertilizer treatment of 300 grams per plant and the Lokal Lara variety, yielding up to 42,61 tons/ha.

Keywords: Dosage, Organic Fertilizer, Tomato, Variety.