

ABSTRACT

Rice (*Oryza sativa* L.) is a major food crop in Indonesia that plays an important role in national food security and has high economic, social, and cultural value. This study aimed to evaluate the growth and yield response of four rice varieties to the application of low-dose NPK fertilizer and three types of animal manure. The research was conducted in Matang Bayu Village, Baktiya Barat Subdistrict, North Aceh Regency at an altitude of 1,75 m above sea level, as well as at the Agroecotechnology and Soil Science Laboratory, Faculty of Agriculture, Universitas Malikussaleh, North Aceh Regency, from August to November 2025. The study was arranged using a Split Plot Design with two factors and three replications. The main plot factor consisted of fertilizer types with four levels: P1 (NPK 100 kg/ha), P2 (cow manure 10 tons/ha), P3 (chicken manure 10 tons/ha), and P4 (goat manure 10 tons/ha). The subplot factor consisted of rice varieties with four levels: V1 (Cigeulis), V2 (Ciherang), V3 (Inpari 32), and V4 (Mustajab). The results showed that different fertilizer types significantly affected and improved the growth and yield of rice across various observed parameters, with the best result obtained from the NPK fertilizer treatment of 40 g/plot. The use of rice varieties also had significant differences and improvements in plant growth and yield across several observed parameters. Overall, the Mustajab variety produced the best growth and yield compared with the other varieties. Furthermore, a significant interaction between fertilizer type and rice variety was observed on rice growth and yield. The combination of NPK fertilizer at 40 g/plot and the Mustajab variety resulted in the best performance, producing the highest grain yield of 9.80 t ha⁻¹.

Keywords: cow manure, chicken manure, goat manure, NPK, rice varieties.