

ABSTRACT

Rice is one of the nation's main food crops whose production is continuously optimized to ensure year-round availability. Different types of rice varieties when planted with different number of seeds with SRI method will affect the agronomic characters, physiology and yield of plants. This study aims to determine the agronomic, physiological, and yield characteristics of several rice varieties (*Oryza sativa* L.) using the System of Rice Intensification (SRI) with different seedling densities. The research was conducted on rice fields in Geulumpang Payong Village, Jeumpa Subdistrict, Bireuen District, Aceh Province, at an elevation of 7 meters above sea level, from August to December 2024. The experimental design used was a factorial randomized block design (RBD) consisting of two factors: variety (V1: Ciherang, V2: Inpari 49, and V3: Mustajab) and number of seedlings per planting hole : B1 (4 seedlings), B2 (3 seedlings), B3 (2 seedlings), and B4 (1 seedling) per planting hole. The results of the study indicate that variety significantly affects plant height, number of tillers, leaf area, fresh plant weight, dry root weight, leaf area index, and percentage of empty grains. The best variety was the Mustajab variety. Seedling number influenced plant height, number of tillers, number of leaves at 20 and 30 days after sowing (DAS), leaf area at 20 DAS, and leaf area index at 20 and 30 DAS. The optimal seedling number was 3 seedlings per planting hole. There is a very significant interaction between variety and number of seeds per planting hole on the number of leaves at 40 and 50 days after sowing (DAS) and at harvest, as well as on root fresh weight at 20 DAS. The best interaction was found in the Ciherang variety treatment with 3 seeds per planting hole.

Keywords: *Number of seeds, SRI, rice crop and variety*