

## **ABSTRAK**

Rice is a commodity that plays an important role as the main staple food for the Indonesian people. The government has made various efforts to increase rice productivity. Developing new superior varieties is a strategic solution to increase rice productivity to meet the increasing national food needs. This study aims to determine the growth and productivity of several IPB paddy lines in Bireuen Regency, Aceh Province. The research method used a single-factor Randomized Group Design with 12 new plat type paddy IPB line and 2 comparison varieties, each with 3 replications. Variables observed included flowering age, harvesting age, plant height, number of tillers per clump, panicle length, number of filled grains per panicle, and grain moisture content. Statistical analysis was conducted using the F test and DMRT test at a further 5% level. The results showed that the GH IPB54 line had the highest yield potential at 11.2 tonnes/ha, surpassing the comparator varieties. Most line also showed superiority in agronomic characteristics, such as panicle length and several productive tillers. These findings suggest that IPB's paddy lines have great potential to be developed into new high-yielding varieties.

Keywords: GH IPB54, new plant type, yield potential, variety