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A comparative investigation on agronomic traits of popularly grown improved and traditional varieties of rice

R.F. Hafeel,[1] V.P. Bulugahapitiya,[2]A.P. Bentota,[3]and G.E.D. de Zoysa[4]

[1]*Rice Research Station, Department of Agriculture, Ambalantota*
[2]*Department of Chemistry, Faculty of Science, University of Ruhuna. Wellamadama, Matara*
[3]*Rice Research and Development Institute, Batalagoda, Ibbagamuwa*
[4]*Department of Biochemistry, Faculty of Medicine, University of Ruhuna, Galle*

Rice is the staple food of Sri Lankans and it is available mainly in different categories such as improved and traditional varieties. Presently, most cultivation (99%) are improved rice varieties,while about 1% of cultivation in the country are the traditional varieties. Since, nowadays, people in the country have an increased interest to consume traditional varieties as a measure to reduce non communicable diseases (NCDs), this study aimed to monitor the growth and yield performance of selected traditional varieties, with comparison to selected improved varieties. Agronomic traits of popularly grown improved (15) and traditional (15) rice varieties were evaluated at Rice Research Station, Ambalantota during the 2016/2107 *maha*season. Fourteen day old seedlings were transplanted in experimental plots (8x3m) with 2 replicates to randomized complete block design (RCBD). A quadrate (30x30 cm) was placed randomly in each plot thrice to count the number of plants and tillers at 4, 5, and 6 weeks after transplanting. At flowering, plant height (PH), panicle length and number of seeds per panicle (NSP), and at harvest, total and unfilled seeds per panicle (USP), grain shattering (GS), thousand grain weight (TGW), and plot yield were recorded. Significant differences among rice varieties were observed in PH, panicle length, NSP, GS, USP, TGW and grain yield. All the traditional varieties(PH 112- 174cm) were taller than improved (PH 84 - 107 cm). During grain filling most of the traditional rice varieties logged totally or partially in the field. The longest (28.8 cm) and shortest (20.6 cm) panicles were reported in Bw 272-6B and Ld 408 respectively. NSP was found to be significantly high in 2 improved varieties Bw 367 and Ld 368. With 4 exceptions, the improved varieties have given yields of more than 5 t/ha, whileyields were below 5 t/ha in traditional varieties. In conclusion, different agronomic traits have contributed favourably to achieve significantly high grain yield in the improved rice varieties. Although different traditional varieties inherit desirable traits for high yields, plant height accompanied by logging as well as grain shattering and unfilled seeds per panicle had affected the yield badly.

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rinthaaj@yahoo.com Tel : +94714476315/ +94473022181-5