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RESEARCH NEWS

PERFORMANCE OF RICE VARIETIES WITH HIGH AND LOW RATES OF FERTILIZER APPLICATION

D.N. SIRISENA, W.M.A.D.B. WICKRAMASINGHE, H.M.A.B. HERATH and H.M.L. JINADARIE LANKA
Rice Research and Development Institute, Batalagoda, Ibbagamuwa

Although a number of rice varieties are currently grown in different soil types, experimental evidence in scarce on their performance under different fertility conditions. An experiment was conducted at the Rice Research and Development Institute, Batalagoda to study the performance of some traditional, old and new improved rice varieties with and without fertilizer application.

Varieties tested were traditional (Suduheenai, Murungakayan, Rathel, Kaluheenati and Suduru Samba), old improved (H4) and new improved (Bg 403, Bw 400, Bg 379-2, Bg 300, Bg 305, Bg 304, Bg 352, Bg 357, Bg 359 and Bg 360) varieties. Performance was tested under zero fertilizer and added fertilizer conditions in a split plot arrangement. Grain and straw yields were obtained at maturity and harvest index was estimated.

Of the twenty varieties tested, Suduheenati, Murungakayan, H4, Bg 379-2, Bg 450, Bg 403, Bw 400, Bg 360 performed well under no fertilizer conditions and varieties Suduheenati, H4, Bg 450, Bg 379-2, Bg 403, Bw 400, Bg 352, Bg 94-1, Bg 357, Bg 358, Bg 359, Bg 360, Bg 300, Bg 304 and Bg 305 performed well with added fertilizer under Varieties Suduheenati, H4, Bg 450, Bg 379-2, Bg 403, Bw 400 and Bg 360 performed well under both conditions whereas varieties Suduru samba, Hondarawala, Rathel and Kaluheenati performed best under both conditions. Grain yields of varieties that performed well under no fertilizer, were around 3 t/ha while with fertilizer it was above 5.5 t/ha. In comparison to grain yield increase, increase in straw yield with fertilizer application was low in Suduheenati, Honadarwala, H4, Bg 379-2, Bg 450, Bg 403 and Suduru samba giving a higher harvest index with added fertilizer than with zero fertilizer. Performance of the other varieties was in the contrary. The results of the study revealed that irrespective of the rice variety, application of fertilizer produced more grain and straw yield but the relationship between fertilizer response and harvest index was poor.

It can be suggested from these results that production of straw and grain at high and low fertilizer is different in the traditional, old improved and new improved rice groups. Screening rice varieties for performance under different soil fertility conditions will produce useful information for recommending suitable varieties for different soil fertility conditions.