

DII 07 Effect of different levels of inorganic fertilizer on filled grain percentage and harvest index of fifty Sri Lankan traditional rice cultivars

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A field experiment was carried out during 2011/2012 Maha season and 2012 Yala season as at Faculty of Agriculture to study the different levels of inorganic fertilizer on filled grain percentage and harvest index of 50 traditional rice cultivars. Recommended fertilizer dose of Department of Agriculture, Sri Lanka for modern rice cultivars was used for the experiment. Four levels of inorganic fertilizer were used: no fertilizer, half of the recommended dose, recommended dose and twice of the recommended dose. Ten day old seedlings were transplanted in rows with 15 cm X 20 cm spacing according to randomly complete block design. Each cultivar was planted in 3 rows and 20 plants were included in each row. Data were collected from the middle row. Filled grain percentage/panicle and total biomass (g/plant) were measured after harvesting. According to ANOVA there were significant effects of fertilizer on filled grain percentage and harvest index. Further there was a significant interaction in between cultivar and fertilizer on filled grain percentage and harvest index. The highest significant filled grain percentage (89.93%) was observed at twice the recommended fertilizer dose in cultivar *Palasithari 601* and in cultivar *Ranruwan* (89.26 %) while the lowest filled grain percentage (13.74%) was recorded in cultivar *Murunga wee* at the half of the recommended fertilizer dose. *Hondarawala* recorded the highest filled grain percentage at no fertilizer condition. Under half recommended dose *Kotathavalu*, *Herath banda*, *Kottakaram*, *Karayal*, *Kiri naran* recorded the highest filled grain percentages. *Dewaredderi* performed well under the recommended dose of fertilizer. *Palasithari 601* acquired the highest filled grain percentage under twice the recommended dose. Harvest Indexes of *Kirikara*, *Kokuvellai*, *Sudu Karayal*, *Tissa wee*, *Suduru samba* increased two folds with the fertilizer increment from no fertilizer condition to twice the recommended dose. Similarly harvest index of *Handiran* increased 3 folds and *Murunga wee* increased 5 folds.

Keywords: filled grain percentage, field experiment, traditional rice cultivars, recommended fertilizer