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Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Weed management
Keyword 2	: Yield gaps
Keyword 3	: Sustainable management practices
Title of Entry	: Competitive Ability of Weedy and Cultivated Rice under Different Agronomic Practices
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Weed-crop competition is a great threat to rice production worldwide. As a weed with close genetic affinity to cultivated rice, weedy rice is an emerging problem in all rice-growing areas in Sri Lanka. To examine competitiveness of weedy rice over improved rice, a field experiment of 2x2x2 factorial treatment in a RCBD with three replications was conducted. Factors were rice type (RT) (cultivated and weedy) plant establishment method (ES) (direct seeding and transplanting) and the weed condition (FC) (with controlling and without controlling weeds). Three-factor interaction significantly effect on plant height at mature stage (PH2), unfilled grain percentage (UFG) and yield per ha (YD). Significantly, highest PH2 (160.4 cm), UFG (55.88%) and YD (4296.4 Kgha-1) recorded in weedy rice in transplanting with weeds, weedy rice in direct seeding with weeds and weedy rice in transplanting without weeds respectively. Two-factor interaction significantly effect on plant height at seedling Stage (PH1), average panicle length (AVPL) and panicle bearing tillers (PBT). RT × FC interaction, weedy rice (89.7 cm) performed better in PH1 than cultivated rice (42.5 cm) in with weeds. RT × FC interaction, weedy rice (26.0 cm) performed better in AVPL than cultivated rice (11.4 cm) in with weeds and ES × FC interaction, significantly high AVPL recorded in with weeds for both plant establishment methods. RT × FC interaction, significantly high PBT recorded in without weeds for both cultivated (5.87) and weedy rice (6.58). RT × ES interaction, weedy rice (6.35) performed well than cultivated rice (6.02) in both transplanting and direct seeding methods for PBT. Highest thousand seed weight (TSW), filled grains per panicle (FP) were recorded in without weeds. Multiple regression analysis showed that yield response cultivated rice YD = -10479 + 1648 PBT + 255.5 TSW + 68.4 FP (R-Sq (adj) – 78.10%) and Weedy rice YD = 3407 - 37.93 PH2 + 1157 PBT + 41.8 FP (R-Sq (adj) – 96.07%). PH2, PBT, FP and TSW highly contributed to the yield components. Those traits are important for future applications in plant breeding to evaluate competitive ability of weedy and cultivated rice under different agronomic practices.

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