



Competitive Ability of Some Weedy Rice Populations at Vegetative Stage Compared to Cultivated Rice

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Abstract

Weedy rice (*Oryza sativa* L. f. *spontanea*) has become an increasing problem in most rice growing areas in Sri Lanka. Weedy rice has direct consequences on farmers' income by reducing yield and commodity value. Weedy rice competes with cultivated rice, affecting both growth and yield, especially with regard to space and nutrient uptake. Limited information is available on competitive ability of weedy rice under Sri Lankan field condition. This study aimed at evaluating the competitive ability of weedy rice compared to cultivated rice at vegetative stage as the growth status of the rice plant at this stage is critical for final yield. Weedy rice seeds collected from 5 weedy rice infested locations (Thihagoda, Hakmana, Mulatiyana, Kotapola and Akuressa) in Matara District and At-362 improved rice variety, as a comparison line were used in the field evaluation. All the weedy rice populations and cultivated rice variety (At-362) were grown in a common paddy field in a completely randomized design with 3 replicates. Germination ability, number of days after sowing (DAS) to 50% of the plant emergence, survival percentage, plant height and numbers of tillers were recorded. Data were analyzed by using ANOVA for measured characteristics. The results obtained in this research reflected great variability among weedy rice populations in Matara District for measured characteristics. There was no significant difference between weedy and cultivated rice for germination percentage. Weedy and cultivated rice were similar in the number of days after sowing spends to 50% of the plant emergence. Weedy rice populations showed significantly higher survival percentage compared to the cultivated rice variety. Number of tillers was not significantly different between weedy however, cultivated rice and Thihagoda and Kotapola weedy rice populations showed less number of tillers compared to cultivated rice. It was also observed that all weedy rice populations were significantly taller than cultivated improved rice varieties throughout the vegetative phase. Weedy rice showed high variability in plant height among tested populations. The results obtained showed the competitive capacity of weedy rice and this trait can be utilized in rice improvement as crop-weed competition is the major issue in rice cultivation.

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