

DII 04 Variability in some yield related traits of weedy rice populations in Matara and Ampara Districts in Sri Lanka

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Weedy rice (*Oryza sativa* f. *spontanea*) is one of the major weeds infesting rice fields worldwide and is a common threat in lowland rice cultivation in Sri Lanka. Morphological traits are variably expressed in weedy rice and some of them have been used to identify different populations that can be distinguished in the field. Among them yield related traits play a key role in their diversity, persistence in the field and adaptive evolution. Therefore, this study was carried out to assess the contribution of diversity in yield related traits of weedy rice on ecological adaptation and persistence in diverse environmental conditions. An extensive field survey was carried out at Akuressa, Thihagoda and Mulatiyana from Matara district and Akkareipattu, Ampara and Lahugala from Ampara district. Collected six weedy rice populations were evaluated in a common field in complete randomized design with four replicates for yield related traits (thousand seed weight, total number of seeds per panicle, filled seeds per panicle, unfilled seeds per panicle and number of shattered seeds per panicle). Seed shattering showed the remarkably highest coefficient of variation (76.76 %) followed by number of filled seeds per panicle (35.95%) while thousand seed weight showed the lowest (13.05%). Comparison of mean values of populations by ANOVA for measured traits revealed that there was a significant difference among populations. Significant variation with geographic distances was observed in two districts with respect to thousand seed weight, unfilled seeds per panicle and number of shattered seeds per panicle. Lahugala population was significantly different from others with most of the traits observed. The knowledge of yield related morphological diversity and the distribution pattern of variation among weedy rice populations provide opportunities for this collection to be useful for genetic improvement and adopt efficient control measures. †

Keywords: weedy rice, seed shattering, variation