

## PARENTAGE ANALYSIS OF SOME WEEDY RICES

H.M.V.G. HERATH<sup>1</sup>, V.A. SUMANASINGHE<sup>1</sup> AND R.M.T RAJAPAKSHE<sup>2</sup>

<sup>1</sup>Department of Agricultural Biology, Faculty of Agriculture, University of Peradeniya, <sup>2</sup>Gene Bank, Plant Genetic Resources Centre, Gannoruwa, Peradeniya.

Weedy rices are troublesome weeds widespread all over the world. They include a range of ecotypes belonging to numerous species of the genus *Oryza*. These plants grow in directly-sown paddy fields and adjacent fields. In Sri Lankan conditions, weedy rices impose problems by affecting the quality and genetic purity of the harvest.

Both morphological and RAPD analyses were carried out to determine the parentage of different weedy rice (WR) accessions collected from Ampara and Akurassa where the problem heavily exists. Three popular cultivated varieties (Bg 94-1, Bg 300, Bg 352), five wild rice spp. (*O. nivara*, *O. rhizomatis*, *O. rufipogon*, *O. eichingery*, *O. garanulata*) and four weedy rice accessions (WR1, WR2, WR3, WR4) and a related species *Hygrooryza aristata* collected from Plant Genetic Resources Centre, Gannoruwa were included in this study.

Morphological analysis was done using selected descriptors from FAO. Nineteen traits including leaf, ligule, culm, panicle and grain (spikelet) characters were studied. For molecular analysis, DNA extraction of 21-day-old plant was carried out using modified CTAB protocol. Initially nine primers were tested and, subsequently three primers were selected for further analysis, based on resolution and polymorphism of DNA profiles. Both morphological and RAPD data were analyzed using Hierarchical Cluster Analysis assuming Squared Euclidean Distance and Single Linkage. Minitab (Version 13) was used for data analysis.

WR1 and WR2 cluster together with other species belonging to sector *Sativa*. It includes *O. rufipogon* and *O. nivara* (with AA genome) that might have contributed as parents to WR1 and WR2. Both morphological and RAPD analysis confirmed that WR3 and WR4 are much divergent from others.