**Differentiation of Sri Lankan traditional rice varieties using AFLP markers**

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Rice production in Sri Lanka has increased during the past 30 years. This has mainly been due to the effort of rice breeders developing new rice varieties. Most of the rice varieties currently grown in Sri Lanka, belong to the category of New Improved Varieties (NIV), which were developed using foreign rice varieties. Although NIV's produce high yields, there is an increasing demand in the export market for Sri Lankan traditional rice varieties because of their grain qualities such as high fiber content. Some of these varieties consist of important traits which are tolerant to drought and rice blast disease. They may also contain novel genes which are resistant to newly evolving pathogens. Therefore we believe that analysis of the genetic diversity of these traditional varieties will be beneficial to plant breeders when developing new varieties. However genetic variations among Sri Lankan traditional rice varieties using molecular markers have not been studied so far. Here we used the Amplified Fragment Length Polymorphism (AFLP) markers to assess the genetic variation among 19 different pure line traditional rice varieties.

AFLP analysis was performed according to the standard protocol described by Peter Vos, with minor modifications.

Unambiguous polymorphic bands were visually scored as present (1) or absent (0). The genetic distances between each variety were calculated by using the RESTDIST programme in PHYLIP software. The distance matrix was used to generate UPGMA based dendrogram. The statistical stability of each node of the dendrogram was calculated by performing bootstrap analysis with 100 replicates. The consensus dendrogram was selected by CONSENSE programme in PHYLIP.

Among the 322 AFLP bands observed, 293 were polymorphic among the 19 different traditional rice varieties. According to the consensus dendrogram rice varieties with resistance to rice thrips and those resistant to salinity were well differentiated. The varieties suitable for wet zone were also grouped into a different cluster.

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