

**GENETIC DIVERSITY ANALYSIS OF TRADITIONAL RICE
VARIETY “POKKALI” USING SSR MARKERS**

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by
**THOTAGODAWATTA MUDIYANSELAGE NIWANTHI BHAGYA
KUMARI THOTAGODAWATTA**

**Export Agriculture Degree Programme
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka**

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ABSTRACT

Genetic diversity analysis of a specific crop species provides more reliable information regarding its molecular level. These results can be used for further crop improvements. Morphological characterization together with Molecular characterization of genotypes provides exact information about the degree of genetic diversity. This study was conducted to access the genetic diversity of 30 Pokkali rice accessions along with two control varieties Bg360 and Kaluheenati based on SSR polymorphism. Pokkali is salinity and flood resistant traditional rice variety. The results of morphological characterization shows that all the accessions were clustered into nine bulks at 72.78 genetic similarity and some accessions were removed from the study due to morphological incompatibility. Those eleven off types were Ac#11699, Ac#11700, Ac#11701, Ac#11702, Ac#11703, Ac# 11704, Ac#11705, Ac#11706, Ac#11707, Ac#11708 and Ac#11709. Analysis of PCR products were done using PAGE and bulked samples with multiple bands were expanded to individuals and revealed they do not possess relationships to be clustered together, contradictory to morphology. Nei's genetic distance among accessions ranged from 0.0764 to 0.9097 identifying 8 duplicate accessions which are Ac#3798, Ac#4160, Ac#5559, Ac#5642, Ac# 3922, Ac#558 Ac#4650 and Ac#5557. Ac#3701 is identified as off type because it bulks with Kaluheenati and BG360. At relative distance of 33, five major clusters were formed clustering BG360, kaluheenati and Ac#3701 separately. All other 19 accessions; Ac#3251, Ac#3957, Ac#3509, Ac#3922, Ac#5560, Ac#5561, Ac#5558, Ac#3798, Ac#4160, Ac#5559, Ac#5642, Ac#4013, Ac# 4650, Ac#5557, Ac#4330, Ac#3573, Ac#3881, Ac#3881 and Ac# 5556 were identified as representative set of pokkali accessions. High genetic diversity was identified in Pokkali accessions as there are many different genes.

Key words: Simple Sequence Repeats, *Pokkali*, Genetic diversity, Representative set