International Conference on Innovations and Research in Agriculture,
Food Science, Forestry, Horticulture, Aquaculture, Animal Sciences,
Biodiversity, Ecology and Climate Change
(AFHABEC-2018)

CROSS-SPECIES TRANSFERABILITY OF MICROSATELLITE MARKERS IN *PINUS KESIYA* (ROYLE EX. GORDON) FROM NORTHEASTERN REGION OF INDIA

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Abstract—*Pinus kesiya is found naturally in the Khasi and Jaintia Hills of Meghalaya in India. It is locally known as Khasi pine and is found in altitudes ranging between 800-2000 amsl. In the present study, the populations from ten different locations in Northeast India were used to test a total of 80 primers (47 nuclear and 33 chloroplast primers) belonging to different source species. The results highlighted that in case of nuclear SSR markers the percentage of primers showing positive cross-amplification was much lower (10.6%) as compared to chloroplast SSR markers (54.5%). The expected heterozygosity (H_E) for the ten populations ranged from 0.172 to 0.436 with a mean of 0.341. The observed heterozygosity (H_O) ranged from 0.068 to 0.439 with a mean of 0.301 and the percentage of polymorphic loci ranged from 40%-100%. The overall gene diversity among populations was higher (mean H_T=0.638) as compared to the within population diversity (mean H_S=0.251). This suggested that the major portion of the total diversity was contributed by intra-population diversity. These microsatellite markers which were identified can be effectively used for population genetic studies and will be helpful for implementing strategies for conservation and proper management of the genetic resource in this species.*

Keywords*: Genetic diversity, Khasi pine, microsatellite markers, Pinus kesiya.*

ISBN: 978-93-85822-67-4