Genetic Diversity and Population Structure analysis of *M. pruriens* (L.) DC. in North-East India using AFLP and Gene Derived Microsatellite Markers

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Abstract—*Medicinal legume Mucuna pruriens L. (DC.) has received significant attention worldwide, as an important source of anti-Parkinson's drug L-Dopa. Although, the species originated in the Indo-China region which includes parts of North-East India, the diversity and population structure of this species in NE India was not studied. Here we report genetic structure of 50 M. pruriens accessions based on simple sequence repeat (SSR) and amplified fragment length polymorphism (AFLP) analyses. Twenty two out of twenty six primer combinations produced 1208 fragments with 1156 (95.70%) as polymorphic and 52 (4.30%) as monomorphic fragments. The PIC value ranged from 0.14 to 0.30 with an average of 0.23 per primer combination. The Jaccard's similarity coefficient varied from 0.45 to 0.90 with an average of 0.66. At the population level, within population variance was much higher than between population's variance. Similar trend was also noted with the results of SSR markers. The cause and implications of low genetic diversity as revealed by both the markers systems are discussed along with population structure of the species in the region.*

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