or guglipid, has been used in Ayurvedic medicine, a traditional medicine for nearly 3,000 years in India. The active ingredient in the extract is the steroid guggulsterone, which acts as an antagonist of the farnesoid X receptor, that result in decreased cholesterol synthesis in the liver. In the present study guggal gum collected from the market is graded into three groups based on colour viz. golden yellow, brown and dark brown and the quality of these three groups were analysed based on content of guggulsterone-E and Z by HPLC method. The resin and gum fractions were separated using ethyl acetate and was further estimate the ethyl acetate portion for the content of guggulsterone-E and Z. High resin percentage was obtained in the golden yellow gum followed by brown and dark blackish brown coloured oleo-gum resin. Further the resin extracts were analysed for its quality i.e. content of guggulsterone E and Z, which indicated that guggulsterone E and Z were also higher in the golden yellow and brown gum coloured material. The present study is an aid for preliminary quality determination oleo-gum-resin of different colours based on guggulsterone.

TS2-P33

Assessment of genetic diversity using RAPD and ISSR markers in guggal (Commiphora wightii)

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Guggal or Indian bdellium {Commiphora wightii (Arnott.) Bhandari} is a large spinescent shrub to a small tree inhabiting drier parts of Western India, mainly Rajasthan and Gujarat. Its gum-resin contains Z and E guggulsterones and is used in Ayurvedic medicines as a remedy to reduce cholesterol, treatment of arthritis and obesity. The populations of this species are declining sharply because of its extensive use in medicinal purpose. Though, C. wightii is assigned to the DD (Data Deficient) category ver. 2.3 (1994) of the Red Data Book of IUCN, the Government of India has included it under RET (Rare, Endangered, Threatened) category. So information on the genetic identity and inter relationship of Commiphora genotypes is essential for proper conservation and utilization. The present investigation was undertaken using Random Amplified Polymorphic DNA (RAPD) and Inter Simple Sequence Repeats (ISSR) markers to study genetic relationships among 24 genotypes of C. wightii, collected from different parts of Rajasthan. A total of 60 RAPD primers and 27 ISSR primers were screened and based on degree of polymorphism, 16 RAPD and 16 ISSR primers were selected for the study. In RAPD analysis, a total of 105 amplicons were amplified, out of which 76 were polymorphic in nature however using ISSR markers, 80 polymorphic loci were observed from a total of 103 loci. The amplified products from both the analysis ranged from 230 to ≥ 3000 bp. In RAPD analysis, maximum number of amplicons was scored in primer OPN 20. Highest resolving power and primer index was observed in primer OPN 20 and OPN 06, respectively. In ISSR analysis, maximum number of polymorphic loci was amplified in (AG)₈G whereas maximum primer resolving power and primer index was observed in (AC)₈C and (CT)₈G, respectively. Cluster analysis, using UPGMA, SHAN clustering (NTSYS-pc) grouped the genotypes into three main clusters which were further subdivided into six sub-clusters in RAPD analysis while ISSR showed four main clusters and nine sub-clusters. The genetic similarity among the genotypes varied from 0.43 to 0.97 when pooled RAPD and ISSR data were used. Hence the study showed existence of wide genetic variability within the species which is otherwise reported as apomictic species and opened the scope of selection of better genotype in relation to chemical data. These findings can also serve as guidelines to preserve the genetic resources of this important medicinal plant species.

TS2-P34

Morpho-physiological characterization of guggal (Commiphora wightii) in Indian hot arid Thar desert

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A study was conducted during 2008 and 2009 for growth performances of Commiphora wightii of five locations viz., Dantiwara, Mangaliawas, Kukma-Bhuj, Bhind-Murena, and Jaisalmer local at guggal