International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.10, pp 178-185, 2017

Analysis of n-alkanes in leaf epicuticular wax of three cultivars of winged bean [*Psophocarpus tetragonolobus* (Stickm.) DC.]

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Abstract : The plant cuticle, the protective waxy covering over the aerial parts of the higher plants represents specific pattern. Leaf epicuticular waxes of fresh and matured leaves of three cultivars of winged bean [*Psophocarpus tetragonolobus* (Stickm.) DC.] were extracted in n-hexane and have been analysed for Thin Layer Chromatography (TLC), Infrared Spectroscopy (IR), Gas Chromatography (GC) and Scanning Electron Microscopy (SEM). The study of epicuticular wax in those cultivars showed remarkable variations. Leaf cuticular wax mainly consists of straight chain aliphatic hydrocarbons with a variety of substituted groups. Scanning Electron Microscopic studies of the leaf cuticular layers and the extracted hydrocarbons revealed specific patterns in three cultivars studied. Among the three cultivars, amount of n-alkane is comparatively high in EC38821B, but low in EC27886. Nineteen n-alkanes from n-C_{16} to n-C_{35} (except n-C_{21}) have been found varying in composition in the mature leaves of three cultivars studied. The predominant n-alkanes were C_{29} and C_{31} while C_{20} and C_{26} were only present in minor amounts. The study may serve as a tool in chemo taxonomical work, along with other characteristics may be useful to identify the cultivars.
Keywords : Epicuticular wax, GC, n-Alkanes, Winged bean, SEM.

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