Pharmacognostical and Biological Investigations of Pyrus Calleryana Decne. Growing in Egypt

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Abstract

GLC analysis for both the unsaponifiable matter and the fatty acid methyl esters revealed the presence of β-sitosterol as the major sterol in all organs under investigation, n-hexacosane was the major hydrocarbon present. Linoleic acid was the major fatty acid present in both the stem and the fruits while palmitic and myristic were the major acids in the leaves and bark respectively. Gravimetric determination of tannin content showed that the stem is the richest organ in tannin content followed by the leaves (4.6%), fruits (3.4%) and bark (2.4%) respectively. HPLC determination of both vitamins A and C revealed that the fruits of the plant is rich in vitamin C (0.22%) i.e. 27g of fresh fruits provide the daily requirement of vit. C, with traces of vitamin A. The aqueous and alcoholic extracts of the different organs under investigation showed a significant hypolipidemic, antidiabetic, anti-inflammatory, and diuretic effects. Moreover, antimicrobial and antifungal effects for the alcoholic extract were also performed; and significant results were obtained. Alcoholic and aqueous extracts of fruits showed the highest diuretic activity (11.3 and 9.9) as compared with moduretic (5 mg/kg) 15.8 ml after 24 hrs. The alc.ext.of leaves and stems decrease the blood cholesterol level after 8 weeks by 44.5 and 34.9% respectively. The alc.ext.of leaves, fruits and bark lower the blood triglycerides by 44.2, 48.3 and 42.1% respectively. The alc.ext.of leaves and fruits reduce the risk factor LDL/HDL by 89 and 81% resp.