Certain pharmacognostical and biological investigations of Pyrus calleryana Decne growing in Egypt.

Mariam Abd Elhameid, S.S.El-Hawary, H.M.A.El-Gohary, R.S.El-Sayed and *A.A.Sleem

Professor

Abstract

The lipid content of the different organs of Pyrus calleryana Decen. have been investigated by carrying out GLC analysis for both the unsaponifiable matter and the fatty acid methyl esters prepared from each organ. This study revealed the presence of sitosterol as the major sterol in all organs under investigation. n-hexacosane, n-decosane, n-octadecane and n-octacosane were found to be the major hydrocarbons present in the unsaponifiable matter of the different organs of the studied plant. Linoleic acid was the major fatty acid present in both the stem and the fruits while palmitic and myristic were found to be the major acids in the leaves and the bark respectively. Gravimetric determination of tannin content of the leaves, stem, fruits and bark of the studied plant was carried out using hide powder method. This study showed that the stem is the richest organ followed by the leaves, fruits and bark respectively. HPLC determination of both vitamins A and C were carried out and revealed that the fruits of the plant is rich in vitamin C with traces of vitamin A.

Some biological activities were carried out for both the aqueous and alcoholic extracts of the different organs under investigation. These activities include: determination of LD50, hypolipideamic, antidiabetic, anti-inflammatory, and diuretic effects. Moreover, antimicrobial and antifungal effects for the alcoholic extract were also performed. Significant results were obtained for both the alcoholic and aqueous extracts. Macro and micro-morphological characters of the flowers were studied in order to complete the pharmacognostical identification of the plant under investigation.