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Pharmacognostical Evalution of *Fragaria vesca* linn leaf

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Abstract

Fragria vesca Dc. (Family: Rosaceae) are used for various medicinal values in traditional system of medicine. Pharmacognostical studies mainly include includes collection, identification, microscopical and phytochemical evaluation of leaves of *fragaria vesca*. The preliminary phytochemical studies indicate the presence of alkaloid, flavonoids, carbohydrates, phytosterols, tannins and fixed oils. The sections were taken and cellular structures were studied. The T.S of leaf shows the presence of epidermis, parenchymatous cells, collateral vascular bundle, lateral vein. Powder microscopy of the leaf shows the presence of epidermal peelings and unicellular unbranched trichomes.
Keywords: *Fragaria vesvca*, Pharmacognostic account, Pharmacological Action

1. Introduction

Fragaria vesca linn (Family:Rosaceae) known as Woodland strawberry. A perennial herb spreading through runners. The leaves, borne on long stalks, are compound with three-foliate and toothed. The flowers are white with five petals that fall off shortly after pollination, and from the receptacle forms the sweet and red fruit. Medicinal plant is traditionally in a number of ailments, such as Considered alterative, anti-inflammatory, antioxidant, anticarcinogenic, astringent, calmative, depurative, diuretic, laxative, refrigerant and tonic, **Cardiovascular Effect, Analgesic** [1-4] Cultivations The done in full sun to light shade, moist to dry-mesic conditions, and soil containing fertile loam or sandy loam. Cool to warm summer temperatures are preferred, rather than hot. Leaves are basal and palmately compound in groups of 3. Leaflets are 1 to 1½ inches long, ¾ to 1 inch wide, coarsely toothed, nearly hairless on upper surface, prominently veined, oval to egg-shaped, rounded towards the tip and tapered toward the base. Leaflets are stalkless, the compound leaf on a long sparsely hairy stem. The tooth at the very tip of a leaflet is mostly about equal in size and extending beyond the teeth on either side of it, though may be smaller on some leaflets. Stems are above ground runners (stolons) that root at tips from which a crown of leaves Image. As shown in fig

Fig No 1: *Fragaria vesca* linn

Despite the many medicinal uses credited to this plant, there are no pharmacognostical reports on the leaf of this plant. So, an attempt was made to standardize the leaf on the basis of pharmacognostical parameters on *Fragaria vesca linn*

2. Material and Method

Collection and authentication of leaves-Leaves of *Fragaria vesca* were collected from Mahabaleshver Authentication was done by Y.C. College , Department of Biosciences.

2.1 Pharmacognostical studies

2.1.1 Morphological studies[5]: Morphological studies such as colour, odour, taste, size, shape, surface of leaf were carried out.

2.1.2 Microscopy of leaf: The outer epidermal membranous layer (in fragments) were cleared in chloral hydrate, mounted with glycerin and observed under a compound microscope. The presence/absence of the following was observed: epidermal cells, stomata and epidermal hairs

(types of trichomes and distribution), epidermis (upper and lower), hypodermis, spongy parenchyma, Xylem elements and ground tissue were also observed under microscope. The transverse sections of the fresh leaves through the lamina and the midrib were also cleared, mounted and observed.[6]

2.1.3 Physicochemical character: Powered leaves were used to determine the rest physicochemical characters like moisture content, total ash, acid – insoluble ash, water – soluble ash, alcohol and water-soluble extractive values [7]

2.2 Phytochemical studies

The leaf powder was subjected to determine volatile oil content. Chemical tests were employed in the preliminary phytochemicals such as carbohydrates, alkaloids, phytosterols, glycosides, flavonoids, proteins. [8, 9,10]

3. Results and discussion

3.1 Physicochemical studies: The physico-chemical analysis of powder exposed the moisture content (loss on drying), total ash, acid insoluble ash, water soluble, alcohol soluble extractives and water soluble extractives are as shown in Table 1.

Table 1: Physico-chemical parameters of *Fragarica vesca* linn

S. No	Analytical parameters	Values
1	Moisture content	9% w/w
2	Total ash value	6.67% w/w
3	Acid insoluble ash value	6.12%w/w
4	Water soluble ash values	3.45% w/w
5	Water soluble extractive values	8.69 %w/w
6	Acid soluble extractive values	11.34w/w

3.2 Phytochemical studies- The results of the preliminary phytochemical screening of leaf of *Fragaria vesca linn* expressed in table no 2

Table no 2: Phytochemical studies of *Fragaria vesca* linn

Chemical Constituents	*Fragarica vesca*
Alkaloid (Dragendroff Test)	+
Glycosides (Borntragers Test)	+
Flavonoid (Shinoda Test)	+
Steroid (Salkovaski Test)	–
Saponins (Foam Test)	-
Carbohydrates (Molisch Test)	++

3.3 Microscopy

The Uniseriate covering trichomes were observed on both surfaces, more frequent on upper surface of midrib portion. The wall of trichome was found ridged. The transverse section of leaf exposed a layer of epidermis composed of rectangular cells as outermost covering on both upper and lower layer. The upper epidermis was enveloped with deposition of cuticle. Upper and lower epidermis presents unicellular covering trichome. In midrib portion, epidermis was followed by 1- 4 layers of collenchymatous hypodermis in continuation with 2-5 layers of Chlorenchyma cells filled with cholorophyll contents. Beneath this, ground tissue portion lies. This portion is composed of oval to polygonal parenchyma cells and is traversed with vascular bundle. As shown in figure no 2, 3 and 4

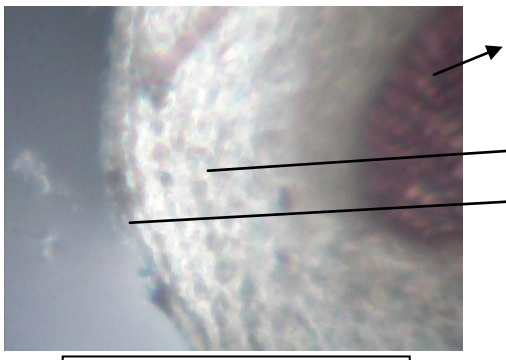

Fig No. 2 :T.S of *Fragaria vesca*

Fig No . 3: vascular bundle of *Fragaria vesca*

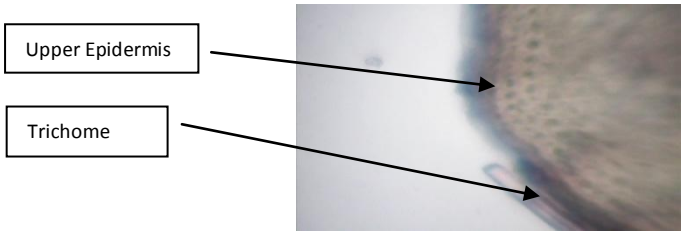

Fig No. 4: Trichome of *Fragaria vesca*

3.4 Powder analysis: Powder microscopy of the leaf shows that thin pieces of epidermal peelings were visible in the powder. Uicellular, uniseriate, unbranched covering trichomes are frequently seen in the powder. Powder also showed lignified xylem fibers. As shown in fig no 5, 6 and 7.

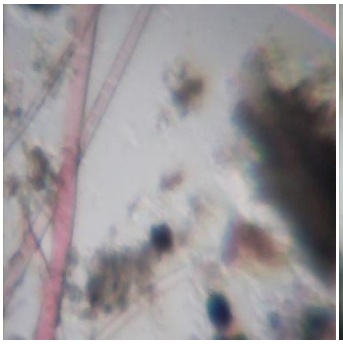

Fig No. 5: Xylem vessel

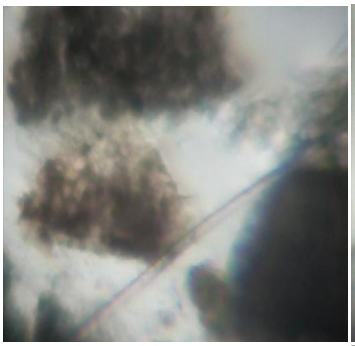

Fig No. 6: Epidermal peelings

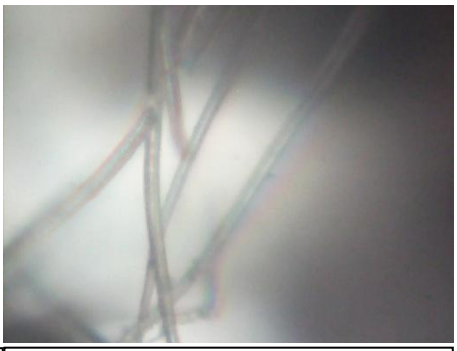

Fig No. 7: Trichome

4. Conclusions

The Pharmacognostic studies include the microscopic characters and powder analysis for the leaves of *Fragaria vesca* linn was performed. It shows the presence of epidermis, parenchymatous cells, vascular bundle, lateral vein, trichomes. The preliminary phytochemical studies of *fragaria vesca linn* show the presence of alkaloids, flavonoids, glycosides etc

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