



Pharmacognostic Analysis of Unani Drug Hummaz (*Rumex vesicarius* L.) seed.

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Abstract

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Aim: the present study was planned to analyse the pharmacognostical profile of the Unani drug Hummaz or *R. vesicarius* seed. **Materials and Methods:** dried seeds were taken for microscopic studies, transverse sections were prepared and stained as per standard procedure and powder microscopy was performed. **Results:** The macroscopic analysis and microscopic analysis of the Unani drug Hummaz proved the presence of calcium oxalate crystals, starch grains, oil globules and aleurone grains. **Conclusion:** This study will help scientifically to ensure the identity, quality, purity and safety of Unani drug Hummaz (*R. vesicarius*) seed for the human use.

1. Introduction

Over the centuries, medicinal plants served as a tremendous remedy for a variety of ailments in mankind worldwide. This practice is derived from experiences, without any scientific evidence; thus, a proper validation of scientific grounds is necessary. The Unani drug Hummaz or *Rumex vesicarius* L. (Polygonaceae), known as Chukra or Bladder dock, is an annual, monoecious glabrous, dichotomously branched, succulent pale green herb. *R. vesicarius* widely distributed in Pakistan, India, Bangladesh, America, and North Africa. The plant is widely cultivated as a vegetable in Tripura, Bihar, West Bengal, Andhra Pradesh

(Imran Ahmad Khan et al., 2014). In the Unani and Ayurvedic system of medicine, it was used as stomachic, antitumor, analgesic, flatulence, spleen disease, high cough, asthma, laxative, bronchitis, dyspepsia, heart troubles, alcoholism and biliousness, tonic, analgesic, cooling agent, for scabies, as diuretic leucoderma, nausea, diuretic and astringent (Imran Ahmad Khan et al., 2013; 2016).

Few phytochemical and pharmacological studies are found in the literature describing the chemical constituents and medicinal potential of the plant *R. vesicarius*. The plant contained bioactive flavonoids substances such as vitexin, isovitexin, orientin and

isorientin, anthraquinones like emodin and chrysophanol particularly in roots, quinones, carotenoids, vitamins, proteins, lipids, carbohydrates, reducing sugars, phenols, tannins, saponins, triterpenoids and organic acids. It possesses strong effect towards antioxidant activity (Mona *et al.*, 2013), hepatoprotective activity (Seham *et al.*, 2011), anti-inflammatory (Asha Tukappa *et al.*, 2014; 2015). tumors, hepatic diseases, indigestion, constipation, calculus, heart troubles, pains, spleen diseases, hiccough, flatulence, asthma, bronchitis, dyspepsia, piles, scabies, leucoderma, toothache and nausea. Diuretic (Vetriselvan Subramaniyan *et al.*, 2018), antiscorbutic, appetizer, astringent, carminative, laxative, stomachic and tonic properties. The seeds are utilized as a refrigerant, to cure dysentery and as an antidote for scorpion venom. The seed powder is taken orally to treat liver diseases and as a laxative (Wadood, 2014).

Most of the studies were carried out on the aqueous or alcoholic extracts of leaves, roots, and fruits of the plants, but least investigations carried out in seed. In this manuscript we analysed the pharmacognostical profile of the *R. vesicarius* seed.

2. Materials and Methods

2.1. Plant collection and identification:

The seeds were purchased from market in Chennai, Tamilnadu,

India and authenticated at Regional Research Institute (Unani), Royapuram, Chennai-600 013 and voucher specimen of the plant was deposited for future reference. The collected sample was dried under shade and stored at ambient temperature until use.

2.2. Pharmacognostic study

Compound microscope, glass slides, cover slips, watch glass and other common glassware were the basic apparatus and instruments used for the study. Microphotographs were taken using a microscope attached with camera. Dried seeds were taken for microscopic studies, transverse sections were prepared and stained as per standard procedure and powder microscopy was performed.

3. Results and Discussion

Macroscopic: Seeds triangular small about 1.5 mm long and 1 mm wide, dark brown; shining albuminous, embryo eccentric, nearly straight, cotyledons linear, taste acrid, odour not specific.

Microscopic: T.S of cross section of seed triangular: testa sclerified, cells elongated radially like palisade, thick walled; tegmen almost crushed, endosperm starchy, embryo parenchyma with cells containing prismatic crystals of calcium oxalate, oil globules and aleurone grains (Fig.1).

Powder: Deep brown, coarse, consisting of small fragments of sclerified and flattened cells from

testa, starch grains up to 10μ and hilum in centre, aleurone grains up

to 17μ , fragments of embryo with prismatic crystal, oil globules (Fig.2).

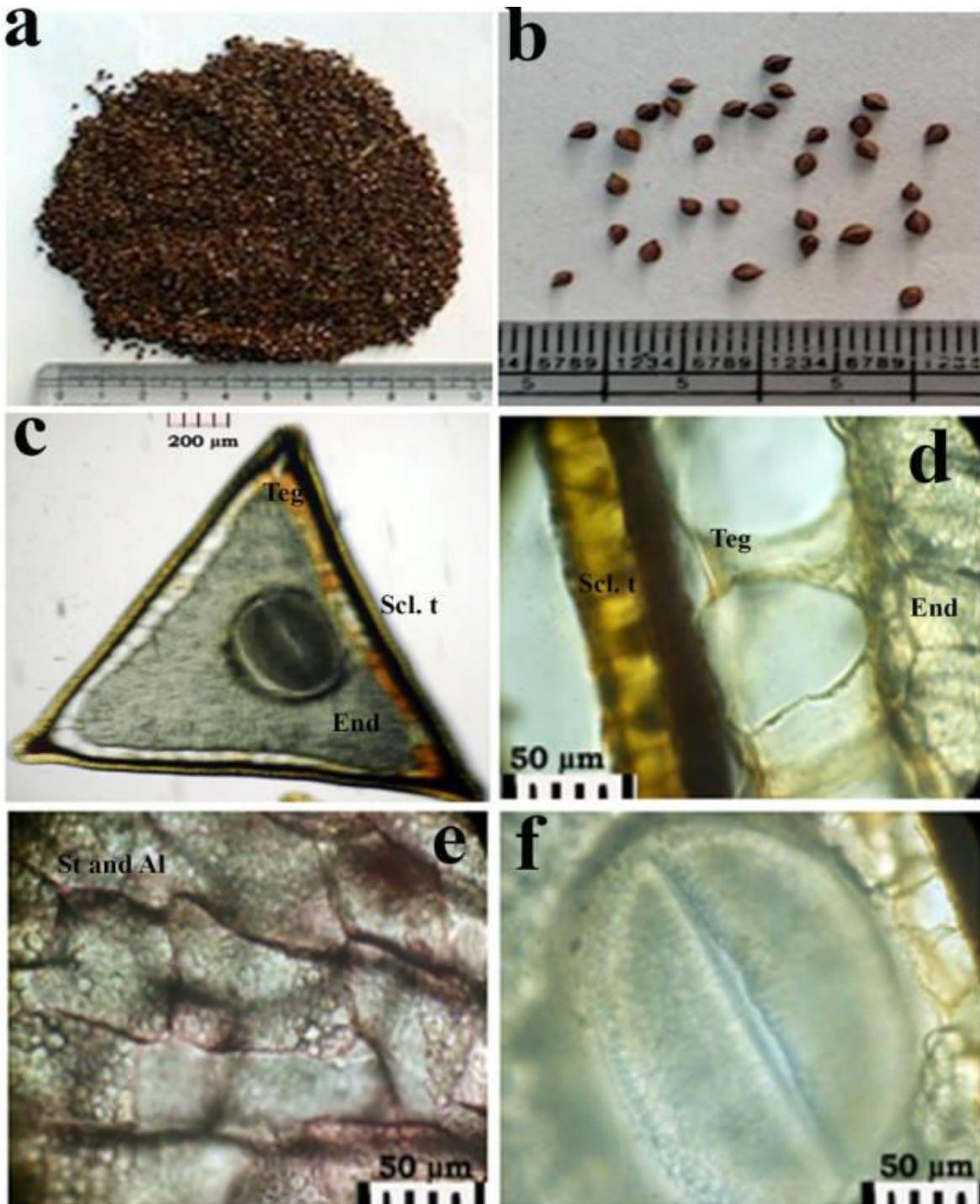


Fig 1. a,b: *R.vesicarius* L. - Seed, c: T.S of *R.vesicarius* Seeds, d: Enlarged upper view of *R.vesicarius* Seeds, e: Enlarged view of endosperm, f: embryo, Scl.t: Sclerified testa, Teg: Tegmen, End: endosperm, St and Al: Starch and aleurone grains.

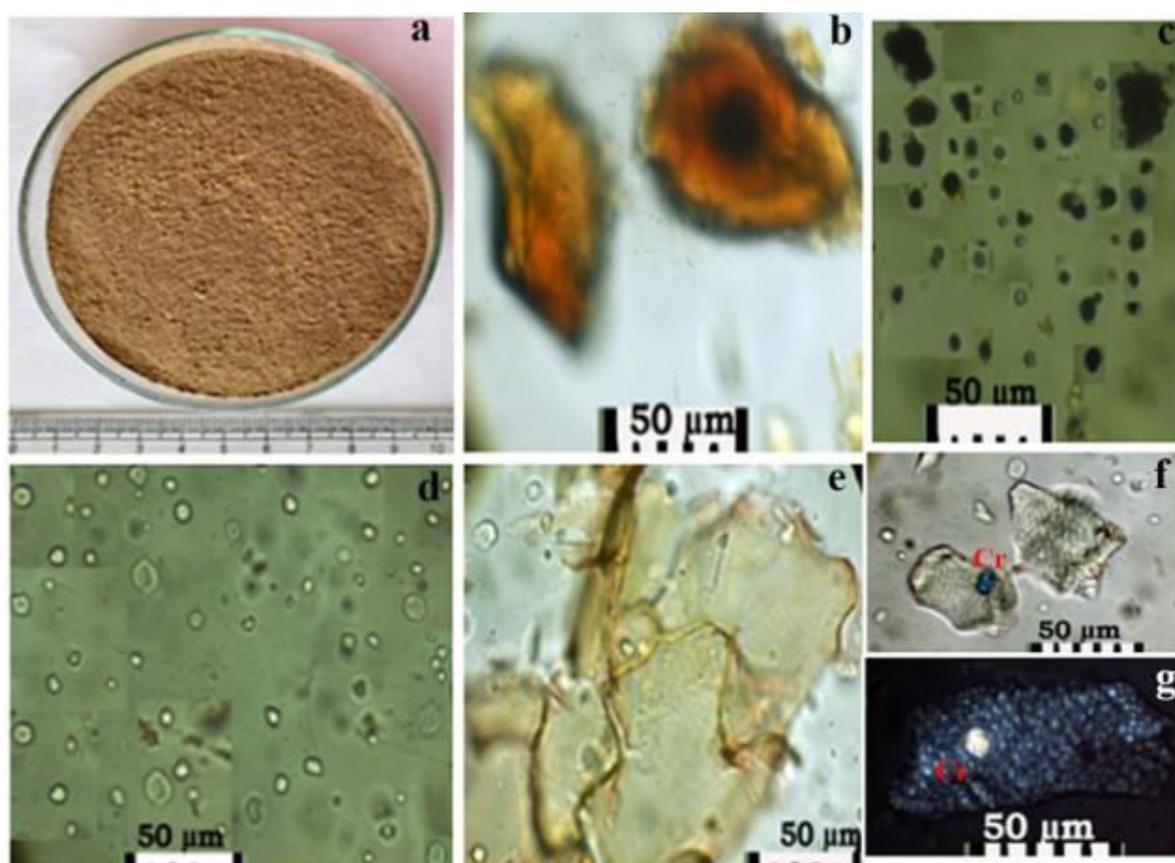


Fig 2. a: Powder, b: Sclereid from testa, c: Starch grains from endosperm, d: Oil globule and aleurone grains, e: Fragments of testa, f,g: Prismatic crystals in embryo fragments.

4. Conclusion

Discussion: Microscopic analysis is one of the cheapest methods to correctly identify the particular drug and the surety of raw material. The result will help to ensure the identity, quality, purity and safety of drug for the human use. From the macroscopic analysis and microscopic analysis, the Unani drug Hummaz proved the presence of calcium oxalate crystals, starch grains, oil globules and aleurone grains. Whenever using the drug as folk medicine, these studies will also be helpful for manufacturer for assessing the purity of raw material. Briefly, the aspects described here

can be considered as characteristic to identify and authenticate this drug Hummaz. This study will help scientifically to ensure the identity, quality, purity and safety of Unani drug Hummaz (*R. vesicarius*) seed for the human use.

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