

# Unani Description of Sumaq Rhus Coriaria Linn. and its Scientific Report

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## Abstract

Plants have played a vital role in the prevention and treatment of diseases since prehistoric times. WHO estimates that 65

**Index terms**— rhus coriaria, sumaq, unani medicine.

## 1 Introduction and History

hus coriaria Linn. is commonly known as Sumaq and the leaves have long been well known in Europe and in the East. It belongs to the family Anacardiaceae 1.

Theophrastus and Dioscorides described it as the fruit of plant used for tanning. Abu Hanifeh in his "Book of plants" says that Sumaq has bunches of small, intensely red berries, and it does not grow in part of the land of the Arabs except Syria 2,3. The fruit rind of Sumaq is commonly known as Post Sumaq which is medicinally used and has astringent property. 4 a) Taxonomical Classification Kingdom:

Plantae, Sub kingdom: Tracheobionta, Super division: Spermatophyta, Division: Magnoliophyta, Subclass: Rosidae, Order: Sapindales, Family: Anacardiaceae, Genus: Rhus, Species: Rhus coriaria Bionomial name: Rhus coriaria Linn. continent as follows: Persian: Samaka, Samak, Sumaq, Hindi: Tatrak, Tatri, Arabic: Tintima, Tamtam, Sumak, Urdu: Sumaq, English: Sumach, Sumak, Sanskrit: Tandidik, Bengali: Sumok, Kashmiri: Samak, Chokmusur, Marathi: Sumak, Punjabi: Minas, Ninawa, Samakdana, Tungla. ??, II.

## 2 Habitat and Distribution

The plant is globally distributed in temperate and tropical regions and can grow on marginal lands. The plants have shallow spreading root system that prevent soil erosion and can grow on poor eroded soil. Most common sumac grown commercially on global scale is R. coriaria in Mediterranean and Middle East, having been cultivated for several centuries to produce a material of high quality for tanning. It is found growing naturally in region of Mediterranean, South east and central and northern regions of Turkey 6,7,8 a) Botanical Description R. coriaria is a 1-3 meter high shrub or small tree. The leaves are imparipinnate with 9-15 leaflets. The inflorescence is a compact and erect panicle, the flowers are small and greenish white. The fruits are a small flattened drupe the size of the lentil of red colour, containing one lenticular polished brown seed 3,8 b) Description of Sumaq As Reported In Unani Literature Sumaq is a fruit of a plant of Rhus coriaria. This plant grows on hard soil its height is up to 2 meter. Leaves are large and reddish in colour. Fruits aggregate equal to the size of the Mako (Solanum nigrum). The peel of the fruit is bitter in taste. The bitterness is increased when fruit ripens properly. There are two varieties of Sumaq 1. Sumaq Bustani (Garden Sumach) 2. Sumaq Kahi (Mountain Sumach), Mountain Sumach has more dryness than that of Garden Sumach 9.

Part Used Medicinally Fruit, fruit rind, extract and peel is used in Italy 10.

## 3 Mizaj (Temperament)

Cold and Dry in 2 degree 11,12 Pharmacological actions Qabiz (astringent), Habisuddam (styptic), Maqawwie Medah (stomachic), Hazim (digestive), 1. It is used to increase the protection property of mucosal layer of stomach, it protects stomach and intestinal irritation due to bile. 2. It is used in the treatment of nausea and

safrawi qai wa safrawi Diarrhoea. 3. Sumaq is used to prevent haemoptysis 4. Due to astringent property Sumaq is used to strength the mucous membrane of stomach as well as intestine 5. Sumaq is also used in haemorrhage in any part of the body due to presence of tannins 6. The sanoon of Sumaq is also used in stomatitis and Pyorrhoea 7. The Joshanda of Sumaq is used for black and shining hairs 8. Sumaq is also used in dysentery 9. The massage of Sumaq is very useful in warts of piles 10. The fine powder of post Sumaq is mixed with alcohol and used in leucorrhoea and menorrhagea 11. In conjunctivitis its Qutoor is very useful. Mazarrat (Toxicity) 17 For chest and liver (For cold temperament person) Musleh (Correctives) 9 Mastagi (Pistacia lentiscus), Anisoon (Pimpinella anisum) and Badiyan (Foeniculum vulgare Mill.) Badal (Substitutes) Sirka (Vinegar), Zarishk (Berberis vulgaris) ?? Miqdare khurak (Dose) 11,16 4-5gm 3-5gm Murakkabat (Compound formulations) 1. Hubb-e-Sumaq 18 2. Qurs-e-Ziabaetus 19 3. Jawarish Tabasheer 19 4. Annushdaro Sada 17 5. Jawarish Zarishk 19 6. Sufuf Shahatrah 19 c) Description of Sumaq (*Rhus coriaria* Linn.) as given in Modern Literature

The modern description of Sumaq can be studied under the following categories:III.

### 4 Geographical Distribution

Sumaq (*Rhus coriaria* Linn.) belongs to the family Anacardiaceae. This family has 60 genera and some 600 species; mainly tropical shrubs and trees. *Rhus* includes 250 species. Sumaq leaves used in dyeing, tanning and fruits as a medicine The leaves have long been well known in Europe and in the East.

Theophrastus and Dioscorides described it as the fruit of plant used for tanning. Abu Hanifeh in his "Book of plants" says that Sumaq has bunches of small, intensely red berries, and it does not grow in part of the land of the Arabs except Syria 2, 3. The fruit rind of Sumaq is commonly known as Post Sumaq which is medicinally used and has astringent property.

### 5 a) Macroscopic Features

Fruit: Small dark brown, hairy, hard, laterally compressed drupe; 3.5 to 4.0 cm in length and 2 to 2.5 cm in width; persistent calyx. 20 Seed: Small, 0.3 to 0.5 cm in length and 0.2 to 0.3 cm in width; brown polished and hard, odour spicy. 20 b) Microscopic Features Fruit: Transverse section shows cuticle and a single layered epidermis with characteristic horn shaped multicellular trichomes, mesocarp 5 or 6 layered cells are thin walled, parenchymatous, filled with oil bodies and tannin, endocarp tissue crushed. The fragments of the epidermal fruit wall cells in surface view are polygonal and moderately thick walled; show the presence of abundant, small circular cicatrices with the epidermal cells radiating around it. 20 Seed: Transverse section of mature seed shows testa differentiated into a radially much elongated thick walled outer layer of palisade cells filled with some brownish contents; followed by a layer of elongated but much smaller radial cells with lignified walls; the inner integumentary cells are also composed of radially much elongated thick walled palisade cells, similar to outer layer; endosperm tissue with numerous oil globules followed by tissues of the embryo present. The fragments of the dark brown testa in surface view show uniformly thick-walled, almost square or rectangular cells. 20 Powder: Powder is dark brown, bitter in taste;

shows characteristic in horn-shaped multicellular trichomes, large and small palisade cells from testa, fragments of fruits walls with cicatrices; testa of the seeds; embryo and oil globule. 20 IV.

### 6 Scientific Studies a) Phytochemical studies

Phytochemicals in *R. coriaria* are being used as antibacterial, antidiarrheic, antidyenteric, antihepatotoxic, antiseptic, antispasmodic, antiviral, astringent, candidicide, hepatoprotective, hepatotonic, protisticide, analgesic, antigastric, anti-inflammatory, antioxidant, antiulcer, fungicide, cyclooxygenase-inhibitor and lipoxygenase inhibitor due to their contents of ellagic acid, gallic acid, isoquercitrin, myricitrin, myricetin, quercetin, quercitrin and tannic acid. 21 Volume XIII Issue VII Version I Year 013 2 ( ) B V.

### 7 Pharmacological Studies a) Antibacterial activity

The hydro alcoholic extracts of *Rhus coriaria* ripe berries were studied against five clinical bacterial strains (Methicillin-resistant *Staphylococcus aureus* (MRSA), multi-drug resistant *Pseudomonas aeruginosa*, enterohemorrhagic *Escherichia coli* O157 (EHEC), *Proteus vulgaris* and *Klebsiella pneumoniae*). *Bacillus subtilis* ATCC6633 was used as a reference strain. The zone of inhibition varies depending on bacterial species and type of extract. The results showed that the antibacterial activity of *R. coriaria* was more effective against Gram-positive bacteria than Gram-negative 21.

### 8 b) Anti diabetic and antioxidant activity

Single dose administration of the extract significantly reduces postprandial blood glucose by 24% (at 5 hrs). In the long term experiment, on the day of 21, postprandial blood glucose (PBG) was found to be significantly lower (by 26%) compared to diabetic control group. The plant extract raised markedly serum high-density lipoprotein (HDL) by 34% and also reduced low-density lipoprotein (LDL) by 32%. Also it had noticeable antioxidant effects by elevating superoxide dismutase (SOD) and catalase (CAT) activities by 46% and 77%, respectively. However it did not show a strong effect on glutathione peroxidase (GPX) activity. The extract inhibited maltase and

sucrase activities by 44% and 27%, respectively. However it made no changes in the transcript levels of INS and GLUT-4 genes. It can be concluded that constituents of *Rhus coriaria* fruits have effective components which can be utilized as useful herb for alleviation of diabetes complications 22,.

## 9 c) Anti hyperlipidemic activity

In an experiment, one-day-old broiler chickens (Ross 308) were used to investigate the effects of sumac fruit (*Rhus coriaria* L.) powder (SFP) on plasma concentrations of total cholesterol (TC), triglyceride (TG), high density lipoprotein (HDL-c), low density lipoprotein (LDL-c), very low density lipoprotein (VLDL-c) and plasma fasting blood sugar (FBS), as well as proportional abdominal fat.. The birds were fed the basal diet (Z-SFP) or diets supplemented with 2.5 g SFP (L-SFP), 5 g SFP (M-SFP) and 10 g SFP (H-SFP) per kg diet. During the whole experimental period the H-SFP birds had a higher feed intake than the Z-SFP and L-SFP birds, though the H-SFP birds had higher feed conversion ratio compared with birds in the other treatments. No significant differences for body weight gain were recorded between the treatments. The M-SFP and H-SFP birds had lower plasma.

TC and VLDL-c concentrations than the Z-SFP and L-SFP birds. No significant differences between the treatments were indicated for plasma TG, HDL-c and LDL-c concentrations. Moreover the plasma FBS concentration of the H-SFP birds was lower than the birds in treatments Z-SFP and L-SFP, but no significant differences were observed between the other treatments 23 .

## 10 d) Antifungal activity

Phytochemical investigation of the ethanolic extracts of the seeds *Rhus coriaria* Linn. (Anacardiaceae) afforded three new aromatic compounds identified as 1-methoxy-4-hydroxy-methylene naphthalene (coriarianaphthyl ether), 7-methoxy-5-methyl benzene-4-al-oic acid (coariariaoic acid) and 1-dodecanoxy-2,8-dihydroxy-anthracene-15oic acid (coriarianthracenylester) along with known phytoconstituents ntetracosane, n-pentacosane, anise alcohol, p-hydroxy benzyl alcohol, methyl lawsone and 2-hydroxyl methylene naphthaquinone. The structures of all the isolated compounds have been identified on the basis of spectral data analysis and chemical reactions. All the new compounds showed the antifungal activity 24 .<sup>1</sup>



Figure 1:

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[Kabiruddin and Khawasul] , H Kabiruddin , Khawasul . New Delhi. 353. (Published by Aijaz publishing house 2861)

[Kabiruddin (ed.)] , Makhzanul-Mufradat Kabiruddin . Idarah Kitabul Shifa New Delhi (ed.) p. .

[Qashmi and Kitabul-Mufradat] , I A Qashmi , Kitabul-Mufradat . (Published by International printing press Aligarh 141)

[Hakeem and Bustan Al Mufradat ()] , M A Hakeem , Bustan Al Mufradat . *New Delhi: Idara Kitab Al-shifa* 2002. p. .

[Evans et al. ()] , W C Evans , Evans Trease , Pharmacognosy . *New Delhi* 2005. Elsevier. p. 27. (15th ed.)

[Ghani and Advia ()] , N Ghani , Advia . *Idarah Kitabul Shifa Delhi* 2011. 826. (3rd ed)

[Guvnc ()] ‘Anatomy of barks of Rhus coriaria L. Turkey: Ankara University Faculty of Pharmacy’. A Guvnc . *J. of Botany* 1998. 22 p. .

[Abu et al. ()] ‘Antibacterial activity of Rhus coriaria extracts growing in Palestine’. B Abu , A Ghaleb , A Dauod , K Safiya , A S Advan . *Journal of the Islamic University of Gaza (Natural Science Series)* 2005. 13 (2) p. .

[Mohammadi et al. ()] ‘Antidiabetic properties of the ethanolic extract of Rhus coriaria fruits in rats’. S Mohammadi , S Montasser Kouhsari , A Monavar Feshani . *DARU* 2010. 18 (4) p. .

[Rayne ()] ‘Chemical profiles of essential oils and non polar extractable from sumach a mini-review’. S Rayne . *Chemistry* 2008. 5.

[Golzadeh et al. ()] ‘Dietary Rhus coriaria L. powder reduces the blood cholesterol, VLDL-c and glucose, but increases abdominal fat in broilers’. M Golzadeh , P Farhoomand , & M Daneshyar . *S. Afr. J. Anim Sci* 2012. 42 p. .

[Chopra et al.] *Glossary of Indian Medicinal Plants, Published and Printed by National Institute of Science communication and Information Resources(CSIR) New Delhi 110012 India*, R Chopra , S Nayar , I Chopra .

[Saeed M (ed.) ()] *Hamdard Pharmacopoeia of Estern Medicine*, Saeed M (ed.) 1997. 157 p. . (2nd ed. Delhi: Sri Satguru publications)

[Nadkarni (ed.) ()] *Indian Materia Medica with Ayurvedic, Unani Tibbi, Siddha, Allopathic, Homeopathic, Naturopathic and Home remedies*, K M Nadkarni . I. Bombay: Popular Parkashan Private L.td (ed.) 2009. p. 1061.

[Hubal ()] ‘Kitabul Mukhtarat Fil Tibb (Urdu translation by CCRUM). Part. 2 nd’. I Hubal . *Ministry of H and FW*, (New Delhi; Govt. of India) 2004. 204.

[Van et al. ()] *Medicinal plants of the World*, B E Van , Wayk , M Wink . 2004. Portland, USA: Timber Press.

[Onkar et al. ()] ‘New antifungal aromatic compounds from the seeds of Rhus coriaria L’. S Onkar , A Mohammed , A Nida . *IRJP* 2011. 2 (1) p. .

[Dymock et al. ()] *Pharmacographia Indica: A History of the principal drugs. Vol I. Srishti book distributors New Delhi*, W Dymock , C J Warden , D Hooper . 2005. p. .

[Published by Department of Ayurveda, Yoga, and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health ‘Published by Department of Ayurveda, Yoga, and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health and Family Welfare’. *Government of India. Part 1* p. . (The Unani pharmacopoeia of India)

[Kabiruddin and Beyaze Kabir] *Published by Hikmat book depo Hyderabad Dakan*, H Kabiruddin , Beyaze Kabir . YNM: 154.

[Rushd and Kitabul-Kulliyat ()] ‘Urdu translation ,Central Council for Research in Unani Medicine (Ministry of Health and Family Welfare Govt’. Ibn Rushd , Kitabul-Kulliyat . *of India) New Delhi* 1987. p. .

[Baitar Aghzia (ed.)] *Urdu translation by CCRUM) New Delhi: CCRUM (YNM)*, Ibn Baitar, Zaba Aghzia (ed.) p. .

[Abu sahal Isa Bin Yahya Ibrahim Almaseehi . Kitabul Miat. (ed.) ()] *Urdu translation CCRUM ) Part 1 st New Delhi: Ministry of H and FW*, Abu sahal Isa Bin Yahya Ibrahim Almaseehi . Kitabul Miat. (ed.) 2008. Govt. of India. 227.