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A Brief Review on Nutrition and Pharmacological Action of *Rumex crispus*

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ABSTRACT

Rumex has different species, different medicinal activity and different nutrition values. *Rumex crispus* (Yellow Dock) Polygonaceae family of plant. *Rumex crispus* such as Root, Leaves, Stem, Fruits, Flower and bark have largely Phytoconstituent, Nutrition and Minerals observed such as anthraquinone, flavonoids like quercetinm-Xylene, octadecane, phytol, and tetradecane, 1-Heptacosanol, 4-Methyloctane, ethyl cyclohexane, eucalyptol. Nutrition content of yellow dock in mainly lipid, carbohydrates, minerals, Vitamin C (ascorbic acid), vitamins A (Retinol), Vitamin E (α-tocopherol), Essential oil, many pharmacological action of *Rumex crispus* such as Antimalaria (parasite, Plasmodium falciparum), antibacterial (against microorganism and pathogens), anti-tumor Agents, Anti-carcinogenic (breast cancer), antifungal, astringent and laxative properties, nematocidal, anticancer, antioxidant and Antimicrobial.

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INTRODUCTION:

The *Rumex crispus* ethnobotanical study of South Africa Eastern cape specific area was represented by wintola and afolayan. Investigation of plants was required in Amatholeareas of Ngqushwa, Amahlathi, Buffalo Nxuba, Nkonkobe, Greet Kie, Mbashe and Maguma[1]. In Serbian,Turkish (fruits, seeds) of *Rumex crispus*. It is used as traditionally for medicinal purpose. Rumex crispus it's mean Rumex mean Acid and Crispus mean curled, it is also called as curled dock or yellow dock, family (Polygonaceae). In long year ago traditionally used different part of plant *Rumex crispus* such as root, leaves, stem, fruits, flower, bark[2].

The remedial purpose Rumex plant used long year ago in china such as 5000 years and in India's mainly for Ayurvedic purpose this plant can be used for different pharmacological activity in traditional system more than 5000 years ago[3].

Phytochemical Constituent:

The many phytochemical constituents in different extraction method such as (water extraction (polar compound), ethanol and acetone extraction (increase solvent polarity), methanol extraction used in plant. The phenolic compound separated by (ethyl acetate extraction) and glycoside, tannin, terpenoid, alkaloid lipid, vitamins, carbohydrates, minerals also included in plant[1-3] .

Table 1: Table of Part of plant phytoconstituent

Sr.no.	Part of plant (*Rumex crispus*)	Phytochemical Constituent	Therapeutic Uses
1	Leaf	Minerals	Nutritional Values
2	Dried Leaf	Retinol, Ascorbic Acid And A-Tocopherol	Vitamins A, C, E
3	Fresh Leaf	Ascorbic Acid	Vitamin C
4	Root	Carbohydrate	Nutritional Values
5	Leaf	5-Eicosene, (E)-, Docos-1-Ene, Trans-5-Octadecene, Tetradecane	Essential Oil
6	Root	1-Heptacosanol, 4-Methyloctane, Ethyl Cyclohexane, Eucalyptol, M-Xylene, Octadecane, Phytol, And Tetradecane.	Essential Oil
7	Leaf	-	Lowering Blood Pressure
8	Whole Plant	-	Rhinitis; Tracheitis. Dermatitis. Enteritis[4]

In the *Rumex crispus* plant different chemical constituents and different therapeutic uses following;

Table 2: Phytoconstituent of Medicinal Activity

Sr.no	Phytochemical Constituent	Therapeutic Uses
1	Phenolic and Flavonoid (artemisinin)	Antimalaria (parasite, Plasmodium falciparum)
2	Anthraquinones and flavonoids	Antibacterial (against microorganisms and pathogens).
3	flavonoids like quercetin, quercitrin, rutin	Treatment on skin disorder, biols, hives, ringworms, jaundice, acne scabies, psoriasis, eczema.
4	flavonoids and glycosides	Discourage the increasing of African sleeping sickness (*Trypanosoma brucei*) parasite.
5	flavonoids	Antioxidant.
6	Ascorbic acids and quercitrin and rutin	Anti-tumor agents.
7	Quercetin	Anti-carcinogenic (breast cancer)
8	1-Heptacosanol	Nematocidal, anticancer, antioxidant and antimicrobial[5-6]

The roots of *Rumex crispus* have been use in traditional medicine as a helpful blood purifier, tonic and laxative, in rheumatism, bilious complaints and as an astringent in hemorrhoids, bleeding, dermatological diseases, from a spring eruption, to scurvy (vitamin C deficiency) and scrofula. The effectiveness in icterus and as a tonic to the stomach and gastrointestinal system. In fruits of *Rumex crispus* have been deliver with advantage in dysentery, in the yellow dock large amount of tannin and anthraquinone denoted astringent and laxative properties.

Antifungal Screening; The *Rumex crispus* plant study antifungal activity for different culture used for *Trichophyton tonsurans, Trichosporon mucoides, Penicillium aurantiogriseum, Penicillium chrysogenum, Candida glabrata* and *Candida albicans*[5].

Antimalaria

Rumex crispus plant denoted Antimalaria action in inhibit the action of malaria parasites (Plasmodium falciparum) in used in blood-stage culture[6].

Roots and green parts of *Rumex crispus* purgative and cholagogue properties and veterinary medicine[7].

Antitrypanosomal Activity

The subspecies accountable for sleeping sickness in Nagana, *Trypanosoma brucei brucei* (T.b. brucei) is infective to humans and is commonly used as a drug screening representation in the laboratory.

Antihypertension

Rumex crispus L. Polygonaceae leaf part used for lowering blood pressure.

Anti-Tumor

R. crispus contain ascorbic acids and quercitrin and rutin acting as anti-tumor agents.

Anti-Carcinogenic (breast cancer)

R. crispus contain quercetin act on breast cancer.

Antioxidant

R. Crispus is found the presence of flavonoids act as antioxidant.

Antibacterial Activity

Gram-negative (*Klebsiella pneumonia, Pseudomonas aeruginosa, Escherichia coli, and Vibrio cholera bacteria*) and four strains of Gram-positive (*Bacillus subtilis, Staphylococcus aureus, Streptococcus pyogenes,* and *Bacillus cereus*) bacteria. *Pseudomonas syringae* p v. syringae, Pseudomonas syringaepv. tomato, *Bacillus subtilis, Bacillus cereus, Yersinia enterocolita, Vibrio cholerae, Corynebacterium diphtheriae, Yersinia frederiksenii, Yersinia pseudotuberculosis, Salmonella typhimurium GC subgroup A, Serratia liquefaciens, Pseudomonas corrugate, Xanthomonas compestris compestris, Agrobact eriumtumafaciens* and *Pseudomonas aeruginosa* have used for antimicrobial activity[7-9] .

CONCLUSION:

Rumex crispus whole plant studied for different medicinal activities. Various reported parts of plant have shown excellent Nutrition content and pharmacological action.

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