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REVIEW ARTICLE

Gloriosa superba Linn – A medicinally important plant

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Gloriosa superba Linn., is one of the endangered species among the medicinal plants (Badola,2002; Hemaiswarya, 2009) which is a striking tuberous climbing plant with brilliant wavy edged, yellow and red flowers that appears from November to March every year (Rajak and Rai, 1990). It is one of the seven upavishas in the Indian medicine, which cure many ailments but may prove fatal on misuse (Joshi, 1993). The tuberous root stocks of glory lily, *G. superba* boiled with *Sesamum* oil is applied twice a day on the joints, affected with arthritis reduces pain (Singh, 1993). It is also used to treat intestinal worms, bruises, infertility, skin problem and impotence. So the art of use of plants medicine is herbalism. Man has been using this miraculous medicine for thousands of years but in couple of decades the practice of herbalism is seen very rare. Although the modern medicine has developed so much improves to be useful in treating many horrible human diseases, but not in reasonable cost (Acharya and Srivastava, 2008).

Traditional system of medicine is found to haveutilities as many accounts. Due to population rise adequate supply of drug and high cost of treatment in side effect along with drug resistance has been encountered in synthetic drugs, which has lead to an elevated emphasis for the use of plants to treat human diseases. India is known for cultivation of medicinal plants, and also India is having rich collection of medicinal and aromatic plants which could be utilize to prepare drugs (Jain and Suryavanshi, 2010).

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Origin, botany and distribution:

Gloriosa is a native of tropical Asia and Africa. The genus derives its name from the Latin word gloriosus, referring to the flowers. It is found growing throughout tropical India,from the North -West Himalayas to Assam and the Deccan peninsula, extending up to an elevation of 2120 M. In Karnataka,it is commonly found growing all along the Western Ghats; it is also found growing in Madagascar, Srilanka, Indo-China and on the adjacent island. *Gloriosa superba* also known as Glory lily belongs to the family Liliaceae and is known by various vernacular names. In Hindi it is known as Karihari, Languli; In English, Glory Lily; In Kanada, Gowrihoo, Akkutangiballi; In Sanskrit, Langali,Visalya; In Tamil, Kalappai killanku, Nabhik kodi. It is an herbaceous, climbing perennial, growing between 3.5 to 6m in length, but usually trained at 1.5m above ground level.

The vines are tall, weak-stemmed with tuberous roots that support themselves by means of cirrhosed tips. The leaves are ovate, lanceloate, acuminate, the tips spirally twisted to serve as tendrils. The flowers are large, solitary or may form a lax-corymbose infloresence, twisted and cripsed with six recurved or reflexed petals, blossoming yellow but changing to yellow-red and deep scarlet. In the bud stage, the petals hang down over the ovary and on maturity; they assume an erect position, leaving the ovary with its stigma exposed at right angles. There are five, long stamens, each with a long anther that displays profuse orange-yellow pollen. The ovary is 3- celled and it forms and ellipsoidal capsule.

Medicinal properties of *Gloriosa superba*:

Gloriosa superba L. (Glory lily) is a medicinal plant belongs to the family Liliaceae. It is one of the important species which are used for several medicinal purposes. The phytochemical present in it leads to have analgesic, anti-inflammatory, antithrombotic, anticoagulant, enzyme inhibitory, anti-venom and chemotherapeutic potential. This article focuses the traditional system of medicinal use for the local people as ayurveda and siddha

Plant parts uses:

Ayurveda tubers:

Abortion purpose, in intermittent fevers, wounds. antifertility purpose, gonorrhea, leprosy, piles. Siddha root and tubers mixed with babchi seed (*Psoralea corylifoila*), black cumin (*Nigella sativa*) and purple fleebane (*Vernonia anthelmintica*) and is made to a paste and is applied externally for various skin diseases.

Ayurveda roots:

Abortifacient, acrid, alexiteric, anthelmintic, antipyretic, bitter, depurative digestive, emetic, expectorant, gastrointestinal irritant, highly poisonous, purgative, rejuvenating, stomachic, thermogenic, tonic, beneficial in vitiated conditions of *kapha* (phlegm) and *vata* (wind). Debility, dyspepsia, flatulence, haemorrhoids, helminthiasis, inflammations, in promoting labour pain and expulsion of the placenta. Ayurveda roots if smeared over the palms and feet of a pregnant woman, delivery of child becomes easier.

Effective against paralysis rheumatism, snake bite, insect bites, against lice.

Ayurveda leafs:

Asthma, leaf extract mixed with sesamum oil is applied twice a day on the joints affected with arthritis reduces pain, effective against lice. Every parts of the *Gloriosa* are used as medicinal purpose, in ayurveda and yunani system of medicine it is a reputed medicine. According to ayurveda, tuber is pungent, bitter, acrid, heating, anthemirtic, laxative, alexiteric, abortifacient and useful in ulcers, gonorrhea, leprosy, piles, inflammations, abdominal pains, itching and thirst. Tubers are also used as antifertility purpose. Coming to the root, the ethnic communities of North-East Indian people say that, *Gloriosa* root paste is used for curing gout, stomach ache, abortion purpose in intermittent fever, wounds. It can be administered to a delivered mother along with spirituous drink to give relieve to her postnatal complaints and also if its root paste smeared over the palms and feet of a pregnant woman, delivery of child becomes easier. Even the leaves of Glory lily have more medicinal qualities, namely for curing asthma, its juice is effective against lice and also against many skin disorders (Radha AKG). It is one of the useful plants to treat various respiratory disorders (Garima *et al*., 2008).

Chemical constituents:

The secondary metabolites of glory lily is gloriosines and colchicines, the tubers and seeds play a main role of colchicines, other than this the chemical constituents are cornigerine, 3-demethyl-N-formyl-N-deacetyl-β-lumicolchicine, 3-demethyl-g-lumicolchicine, 3-demethyl colchicines, colchicocide, gloriosine, tannins and superbine (Capraro and Brossi,1984) have been isolated from plant. β -sitosterol, its glucoside, a long chain fatty acid, β and g-lumiccolchicines from fresh tubers and luteolin, colchicines, N-formylde acetylcolchicines and glucosides of 3-demethylcolchicine have been isolated from flowers. So more over in the world market they are considered as rich sources of colchicines and gloriosine (Srivastava and Chandra, 1975; Prajapati *et al*., 2003).

Plant parts chemical constituents:

Plant cornigerine, 3-demethyl-N-formyl-N-deacetylblumi-colchicine, 3-demethyl-g-lumicolchicine, 3- demethyl colchicines. Young leaf cholidonic acid flower luterlin and its glucosides, Nformyl- de-Ac-colchicine, lumicolchicine fresh tubers, root colchicine, b-sitosterol, its glucoside, a long chain fatty acid, β and glumiccolchicines, 2-0H-6-MeO benzoic acid.

Seed high level of colchicines:

Awareness of *Gloriosa superba*(Linn):

The toxins of *Gloriosa superba* have an inhibitory action on cellular division resulting in diarrhea, depressant action on the bone marrow and alopecia. Usually all parts of the plant, especially the tubers are extremely poisonous (Angunawela and Fernando, 1971; Aleem, 1992) and causes vomiting, purging, stomach ache and burning sensation (Roberts *et al*., 1987). The glory lily has been used for suicidal purposes in India, Burma and Eastern Africa due to presence of colchicine (Menis, 1989; Lewis and Elvin, 1997).

Conclulsion:

A perusal of the literature shows that *Gloriosa superba* has been widely used for curing asthma, intermittent fever, leprosy, gout, rheumatism, piles, paralysis and many other maladies. A number of pharmacologically important phytochemicals such as gloriosine and colchicines have been isolated from this plant. This report has provided an introduction to the panoply of reported therapeutic uses of *Gloriosa superba* further efforts are requires in order better understanding the biological activities reported, and to isolate, purify and chemically characterize the active principle of *Gloriosa superba*. Randomized trials should ultimately be conducted to rigorously evaluate the safety and efficacy of some of the most widely reported curative applications of this popular medicinal plant.

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