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Review Article

MEDICINAL & ECOLOGICAL POTENTIAL OF KASERU *(SCIRPUS GROSSUS)*: A REVIEW

Dr. Lalit Raj Singh

Post Graduate Centre for Applied Medicinal Plants' Sciences,
Dev Sanskriti Vishwavidyalaya, Haridwar-249411

Abstract: Aim of this study was to review the efficiency of plant in curing various disorders/disease along with phytoremediating potential of the plant. Microbes associated in their rhizosphere help in biodegradation of hydrocarbons and removal of metals and heavy metals from water and soil. Ethnomedicinal uses of the plants help in curing various disorder/disease in human. Phytoconstituents percentage, safety, Purity, strength and therapeutic index of the GACP plants is higher.

Keywords: Phytoremediation, GACP, Sustainable, Phytoconstituents

Introduction: India is emerging country with wide scope for growth in various sectors. Healthcare and environmental pollution are of high concern. We need to explore our potential of rich flora so that we may overcome our both problems in sustainable manner. Medicinal plants offer alternative remedies for various ailments in safe and efficient way. These have enough potential to cure some incurable disease also that need to be explored. According to WHO, people of developing countries depends up on the herbal medicines for primary healthcare these are source of potential molecules for new drug design. Ethno-medicinal practices are used to prevent, alleviate or cure several human diseases. *Scirpus grossus* not only valued as herbal drug but also utilized for food, fodder, starch & essential oil etc. The global market for the medicinal plants and herbal medicine is estimated to be worth US$ 900 billion a year and the market for Indian systems (Ayurveda, Unani & Siddha) of medicine is about Rs. 5000 crores per year. Unorganized and poor infrastructure is a very big problem for developing countries of Asia & Affrica. Industrial effluents such as Cu, Ni, Fe, Al, heavy metals and diesels are phytoremediated. Plants associated beneficial microbes directly enhance the efficiency of phytoremediation process by altering the metal accumulation in

For Correspondence:
lalitraj.singh@dsvv.ac.in.
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plant tissue. Plant transfers the oxygen to rhizosphere and release soluble exudates that feed microorganisms and enhance biodegradation. Ecological balance is maintained. Excess amount of metals, heavy metals and hydrocarbons are remediated by this plant. Chances of biodiversity loss are minimised. The removal of hydrocarbons through degradation mainly depends on the capabilities of the microorganisms in the rhizosphere. But, the medicinal properties of such plants are degraded due to changes in their secondary metabolites and resulting in poor therapetic index. The Medicinal efficacy and potency of the plant is suppressed. Therapeutic quality, purity and strength of the plant metabolite depend up on the good agriculture cultivation practices (GACP). Though, this plant is found wild in temperate and tropical climate of the country on the margin of ponds & swampy places. GACP (Good Agriculture Cultivation Practices) enhances the percentage of phytoconstituents and their therapeutic index in various diseases.

Details of the Plant:

Botanical Name: *Scirpus grossus*
Hindi Name: Kaseru
Family: Cyperaceae

Geographical Source: Tropical and temperate climate in Ponds and swampy areas

Morphology: Flowering occurs in rainy season. Fruits are of small size, greyish- black in colour. Rhizome oval to cylindrical. Black coloured rhizomes & rounded scars. Black externally & cream coloured internally. Rhizome is similar to Cyperus rotundus.

Plant part used: Rhizomes and leaves

Chemical constituents: Protein 5-7%, Gum 6-10%, Starch 65% and some alkaloids **in** small amounts

Purity: Foreign matter -Not more than 2%
Total Ash - Not more than 8%
Acid-insoluble Ash - Not more than 3%
Alcohol –soluble extractive - Not less than 4%
Water-soluble extractive -Not less than 9%

Medicinal uses: Swaras of Kaseru is used to jaundice. It cures vomiting and Pitta disorders. Tonic to heart muscles, help in milk secretion and breast development. Skin and eyes disorders.

Ethnomedicinal usage of the plants in various disorders:

Diarrhea & heat stroke: Rhizomes of the plants and rose water are mixed to make a homogenised mixture. Filter it. The filtrate is given to patient twice or thrice in day for better results. Patient feels calm and relaxed. Heart beat is controlled.

Eyes disorder: Paste of rhizome and *Glycyrhiza glabra* are applied on eyes externally to relieve from redness of eyes (due to higher B.P, heat stroke, bacterial infection).

Erysipelas and cellulitis: Lepa is prepared with Cow Ghee and applied externally twice a day. Rhizomes and leaves of the plant are used for preparing Lepa.

Antiabortifacient decoction: Take equal amount of *Scirpus grossus*, Asparagus racemosus, Trapa natans, Centella asiatica, Nymphaea alba. Make the decoction of it. Take the decoction by the empty stomach in the morning and evening for better results. Abnormality in menstrual cycle is checked. Uterus pain is also cured.

Cough, Cold, General weakness, Fever, Jaundice & Heart disorders: Kaservaavleha is preapred to cure no of disorders. Prepare the decoction of Kaseru (*Scirpus grossus*) by taking 2.5 kg rhizomes in 25 litres of water. Boil it untill 1/4 th water is left. Add 5 kg organic jaggery and ¼ kg cow ghee in it. Boil it further for 15-20 minutes. Add 180 gms of Trikut, 135 gms of Trijat and 100 gms of Kaseru powder. Kaservaavleha is prepared. Take 10-15 gms daily for better results.

Summary & Conclusion: India is emerging country. Healthcare and environmetal issues are of great concern. *Scirpus grossus* has phytoremediation and medicinal usage. It has great potential to cure various disorder and disease. Quality, Purity and Strength of the herb

depends up on Good Agriculture Cultivation Practices (GACP). Plant for medicinal uses should be cultivated because wildly collected plant may have heavy metals, metals and other toxic metabolite accumulation in their rhizomes. Therapeutic potential of the plant is suppressed. Microbes associated in rhizophores degrade the hydrocarbons and alter the concentration of metals in soil and water. It is found wildly in temperate and tropical climate of India in swapy areas and on the bank of rivers and lakes. It is easy to cultivate in farms for better therapeutic results. Phytoconstituents/ sec. metabolites percentage is enhanced in the cultivated plant. It may be boon for Nirmal Ganga Abhiyan because of its dual potential to cure human ailments and sustain ecology. It helps in ecological balancing and conservation of biodiversity.

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