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## MEDICINAL USE OF *CYPERUS ROTUNDUS* L.: AN ETHNOBOTANICAL STUDY

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**ABSTRACT:** The Initial exploratory attempt was made to study the prevalent medicinal flora of Jhansi district of Uttar Pradesh which is a potentially rich heritage of floristic element of medicinal and therapeutical values. The present study deals with angiospermic plants belonging to 55 genera and 38 families of Jhansi district for curing various disorders among different ethnic societies. The important genera are *Cyperus rotundus* (Cyperaceae), *Allium cepa* (Liliaceae), *Argemone Mexicana* (Papaveraceae), *Azadirachta indica* (Meliaceae), *Evolvulus alsinoides* (Convolvulaceae), *Cassia tora* (Fabaceae), *Achyranthus aspera* (Amaranthaceae), *Caesalpinia bonduc* (Caesalpinaceae), *Cleom viscosa* (Capparidaceae), *Lawsonia inermis* (Lythraceae), *Ricinus communis* (Euphorbiaceae) and *Urena lobata* (Malvaceae) etc., but detailed study was made to evaluate the use and effect of *Cyperus rotundus* only.

**Keywords:** Tunicate, Therapeutical, Chronic

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**INTRODUCTION:** India has great heritage knowledge of the medicinal utility of plants. Many plant species occur as self-grown condition are being used by people for treatment of various diseases like rheumatic arthritis, Jaundice, liver and spleen enlargement, respiratory disorders, digestive and urinary disorders, skin diseases and scorpion and snake bites<sup>1, 2, 3</sup>. Present study based on the medicinal utility of *Cyperus rotundus* which is perennial herbs, having long stolons, bearing hard, black, fragrant tubers. Leaves narrowly long, linear and nuts are greenish black<sup>4</sup>.

It is found throughout India up to the elevation of 1800m from Kashmir to Shimla, Garhwal and Khasia hills, throughout the plane of almost all the states and ascending the mountains of the Central table land from Mount Abu and Pune to the Nilgiri hills<sup>5, 6, 7, 8, 9</sup>.

### MATERIALS AND METHODS:

**Pharmacognosy:** Stolon is slender, tubers hard, ovoid, tunicate, black from outside, fragrant, inner surface white, fracture mealy, root fibers clothed with flexuous hairs. The rhizome is characterized by thick-walled endodermis dividing a cortical portion and central ground tissues. The epidermis consists of typical parenchymatous cells with brownish pigments<sup>10</sup>. Hypodermis consists of thick-walled cells. Cortex is composed of parenchymatous cells; outer part compact, outer part parenchymatous with large intercellular spaces. Some cells of cortex contain brownish oleoresinous matter of starch grains.

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Vascular bundles are closely scattered in the pith<sup>11, 12</sup>. Pith is composed of parenchymatous cells containing starch grains and few filled with oleoresinous contents. Each vascular bundle is enclosed by a lignified fibrous sheath. Vessels have blunt or tapering ends. Root-shows a broad zone of cortex, outer cortex two-layered, inner cortex rapidly breaking down, thickened innermost layers persistent, cells tangentially flattened, thickly walled. Endodermis consists of uniformly thickened roundish cells. Xylem consists of 12 small vessels adjacent to pericycle and 4 large vessels of unequal size near the center. Central ground tissues are thickly walled and fibrous<sup>13-15</sup>.

**Chemical Constituents:**  $\beta$ -sitosterol, 4 $\alpha$ , 5 $\alpha$ -oxidodeudesm-11 en-3 $\alpha$  of from (rhizomes), pinene, cineol, alcohol isocyperol (essential from tubers), linolenic, linoleic, oleic and stearic acid and glycerol (fatty oil) Mustakone and copaene, cyperotundone, rotundone and cyperolone, cyperenone designated as isopatchoul-4(5)-en-3-one (essential oil), oleanolic acid and its glycosides,  $\alpha$ -cyperon, cyperene,  $\beta$ -selinin and cyperenone (tubers); luteolin (leaves)<sup>16, 17</sup>.

**Pharmacological Activities:** Tranquillizing, anti-inflammatory, antipyretic, diuretic, estrogenic, smooth muscle relaxant, inhibitory activity against flunitrazepam binding to benzodiazepine receptor, antimicrobial, and juvenile hormone-mimicking activity<sup>18, 19, 20, 21</sup>.

**Toxicology:** The LD<sub>50</sub> of petroleum ether extract of root was 50 mg/kg, and ED<sub>50</sub> was 1.6 mg/kg intraperitoneally.

**Substitutes and Adulterants:** *Cyperus scariosus* R.Br. and *Cyperus arundinaceum* Baker is used as substitutes to *Cyperus rotundus*.

## RESULTS AND DISCUSSIONS:

**Action and Use:** The tubers are acrid, bitter, astringent, cooling, anti-inflammatory, revulsive, galactagogue, depurative, intellect promoting, nervine tonic, digestive, carminative, stomachic, diuretic, expectorant, diaphoretic, demulcent, vulnerary, antiperiodic and tonic. They are useful to hyperdapsia, anorexia, flatulence, colic, vomiting intestinal worms, diarrhea, dysentery, vomiting, inflammations, fevers, intermittent malarial fevers, skin diseases, leprosy, scabies,

wound, ulcers, neurasthenia, amentia, epilepsy, cough, bronchitis, renal and vesical calculi, ophthalmic disorders and general debility<sup>22-25</sup>.

**Propagation and Cultivation:** It is a perennial weed, thrives under all kinds of soils under varying climatic conditions. Regeneration is mainly through underground rhizomes. Observations show that a new tuber is formed in about 3 weeks after an isolated tuber is planted and 146 tubers and basal bulbs are produced from a single tuber in 3.5 months<sup>26, 27, 28</sup>.

**Therapeutic Evaluation:** Two compounds herbal preparations, consisting of *C. rotundus* as one of the constituents, were found effective in the treatment of diarrhea, dysentery and giardiasis<sup>29-32</sup>.

A study was made to evaluate the effect of aqueous solution (2%) of methanolic extract of the root of *C. rotundus* in conjunctivitis. The drug decreased the redness, pain, and ocular discharge, and most of the patients were cured within 5 days.

**CONCLUSION:** During the surveys, it was found that most of the plants are useful in more than one disease and easily available throughout the year. By conserving these plants, we can make treatment cheaper non-reactive, safer, and easily accessible to everyone.

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**CONFLICT OF INTEREST:** Nil

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