To study the action of Basella alba ethanolic extract on Calcium Oxalate in vitro.

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**Abstract**: Basella alba plant is used for the treatment of the diseases as well as different healing activities of human beings. Basell alba is cool season, vegetable and widely cultivated. It is also called as Malabar Climbing, Puli Shak. Fresh leaves are commonly chewed for treatment of Kidney stone treatment around this area. The aim of study was to evaluate role of B.alba extraction on dissolving capacity of calcium oxalate crystals. Leaves extracts shows admirable dissolving capacity of crystals in vitro.

Keywords- Basella alba, Calcium oxalate, calculi / kidney stone

**Introduction**

Basella alba is cool season vegetable with climbing growth habit. It is a succulent, branched, smooth several meters in length. Leaves are fleshy; leaves and stem are used for medicinal purpose (1).

**Pharmacological properties** –

Anti-inflammatory (2), anti-fungal, analgesic.

**Chemical composition** -

Leaves contain – protein, fats, vitamin A, vitamin C, vitamin E, vitamin K, Folic acid, riboflavin, niacin, thiamin.
**Taxonomy**

**Kingdom:** Plantae

**Phylum:** Magnoliophyta

**Class:** Mangoliopsidia

**Order:** Caryophyllales

**Family:** Basellaceae

**Genus:** Basella

**Species:** alba

**Vernacular names-**

**English** - ceylon spinach

**Hindi** - lalbachlu

**Bengali** - Puishak

**Telgu** - Bachhali

**Marathi** - mayalu

**Sanskrit** - Upodika

Most of renal calculi are composed of some organic compounds like proteins and impregnated with inorganic salts. The most important ones are calcium salts as they make the calculi (strong) hard and difficult to dislodge and move. Amongst all calcium salts calcium oxalate crystals / deposits are 75%.

If the deposition of calcium oxalate is prevented or already deposited salts are easily removed/washed, the calculi can become brittle and easily expelled out.

Hence the study was conducted with following aims and objectives

**Aim**

To study the effect of ethanolic extract of Basella alba on laboratory created calcium oxalate crystals.

**OBJECTIVES**
1) To study solubility effect of hydro-alcoholic extract of Basella alba on laboratory created calcium monohydrate and calcium dehydrate crystals.

2) To study solubility effect of hydro alcoholic extract of Basella alba on laboratory created calcium oxalate crystals pH adjusted.

3) To study the recovery of calcium oxalate from the solution produced by action of hydro alcoholic extract of basella alba on laboratory created calcium oxalate crystals.

**MATERIAL AND METHOD**

Preparation of calcium oxalate crystals-

Oxalic acid and lime water heated at constant temperature 40°C, cooled overnight and calcium oxalate crystals were collected dried over filter paper,

Preparation of extract-

Fresh leaves were collected, identified and authenticated, washed and dried in shade, Soxhlet extractor was used for extraction using ethanol as a solvent, six cycles were given and the extract was collected and stored in amber color glass bottle for further use.

**Method**-

500mg weight of calcium oxalate was taken for study purpose in Petri dish

Dilution in ratio 1:10, 1:100, 1:1000 of the extract were prepared and then added to calcium oxalate crystals in Petri dish.

Five groups-

Group A – Extract

Group B- Alkalizer (cital)

Group C – Extract + Alkalizer (equal parts)

Group D – Solvent (ethanol)

<table>
<thead>
<tr>
<th>GROUP</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
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<tbody>
<tr>
<td>1:10</td>
<td>500mg</td>
<td>500mg</td>
<td>500mg</td>
<td>500mg</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>1:100</th>
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<th>500mg</th>
<th>500mg</th>
<th>500mg</th>
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<tbody>
<tr>
<td>1:1000</td>
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<td>500mg</td>
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Solubility

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<th>D</th>
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</thead>
<tbody>
<tr>
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<td>18 min</td>
<td>25 min</td>
<td>20 min</td>
</tr>
<tr>
<td>1:100</td>
<td>13 min</td>
<td>17 min</td>
<td>26 min</td>
<td>18 min</td>
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<td>1:1000</td>
<td>12 min</td>
<td>17 min</td>
<td>27 min</td>
<td>18 min</td>
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POST EVAPORATION - at room temperature

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<tbody>
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<td>194mg</td>
<td>450mg</td>
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<tr>
<td>1:100</td>
<td>90mg</td>
<td>118mg</td>
<td>176mg</td>
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<tr>
<td>1:1000</td>
<td>235mg</td>
<td>176mg</td>
<td>211mg</td>
<td>332mg</td>
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**Result** – pre and post evaporation weight shows difference, 1:100 dilution of extract shows 90 mg weight while cital solution 1:100 shows 118 mg post evaporation weight. Thus we conclude that Basella alba in diluted form has action on calcium oxalate crystals which may be helpful in treatment of calcium oxalate stones. Further study in vivo is necessary.

For this we can conclude that Basella alba may reduce the size of stone and may help in eliminating the stone/calculi from the urinary tract.

**REFERENCE**

1) Kumar P, INDIAN SPINACH Basella alba (POI)succulent, branched, smooth, twining herbaceous vine, Best Nutrition, 2010