MEDICINALLY USEFUL ORNAMENTAL PLANTS OF KITCHEN GARDEN

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ABSTRACT
Since ages plants are being used for food and fuel, shelter and medicine. Some of ornamental plants are grown in home gardens mainly for decorative purpose. In addition to ornamental importance, many plants are having useful medicinal properties as well. One should know how to manage minor health problems and there is a need to know about natural medicine. A good kitchen/home garden not only lends flavour to our culinary skills, it even keeps germs at bay. The present study illuminates the ethnomedicinal/traditional herbal knowledge of ornamental plants that are generally grown in every home/kitchen garden for beauty and decorative purpose. The medicinal significance of selected 20 ornamental plants like Adhatoda vasaka, Bryophyllum calycinum, Coleus aromaticus, Hibiscus rosasinensis, Jasmine officinale, Jasminum sambac, Nelumbo nucifera, Nyctanthes arbor-tristis, Rosa centifolia etc. in treatment of various ailments in day to day life have been discussed. The literature summarizes the habit, major chemical constituents and various reported pharmacological and clinical trials of the selected plants for the further study. This literature unveils the medicinal values of above mentioned ornamental plants. In rural India where people have limited income and poor access to advanced medical facilities there the medicinal plants of home gardens can prove to be important source of health care.

KEYWORDS: Home garden, Health care, Ornamental plants, medicinal use.
INTRODUCTION
Homestead gardens have been a part of human livelihood, providing food, fuel, shelter and medicine to mankind since prehistoric times. In general, home gardens are characterized by different vegetation strata composed of trees, shrubs and herbs in association with annual and perennial agricultural crops. Plants are very frequent and extremely important element of man's environment. They are not merely structural elements of the environment, but they also imbue it with life and tinge it with beauty, specially the ornamental plants. They play a vital role in man’s life both in rural and urban areas. In rural areas they are the major source of subsistence production and income generation (Kumar and Nair 2004) whereas plants in cities have a humanizing effect (Relf, 2003) by enhancing the quality of the environment and providing healthy nutrition.

Now-a-days, different types of plantations are being observed everywhere by the Government as well as public that is growing of ornamental garden plants for the display of aesthetic features including flowers, scent, overall foliage texture, fruit, and bark, and aesthetic form. In such instances, probably the attention is paid towards its economic utility and a view of providing shade and show. But no proper attention is being paid towards the medicinal utility of those plants. A good kitchen/home garden not only lends flavor to our culinary skills, but even keeps germs at bay also. Most of the plants which are ornamental in nature, are also having proved medicinal property also. But most of the present generation is unaware of its traditional values. Proper utility of such plants in day to day health care is well described in various Indian system of medicines like Ayurveda, Siddha, Unani and by different vaidyas and folkhealers of India.

In developing country like India, a good amount of the family income is spent on medicines and basic health care needs. The proper utilization of traditional and ethno medicinal knowledge of such plants can prove to be a beneficial step towards improving family health. The present paper reviews the traditional cum ethno medicinal uses of selected easy to grow, ornamental plants of home (kitchen) garden for the treatment of various ailments, which we come across in day to day life. Present literature summarizes the habit, major chemical constituents and various reported pharmacological and clinical activities of the enlisted plants (Table 1).

Some medicinal cum ornamental plants can easily be grown at our kitchen (home) garden. Such plants can be used as single drug remedies for some common ailments like cough, cold,
indigestion, constipation etc. A brief description of such plants mentioning their therapeutic values have been mentioned as follows:

**Ethnomedicinal uses of various ornamental plants grown in kitchen garden**

1. **Adhatoda vasaka** (Syn: *A. zeylanica*) Sans: Vasa Hind.: Adusa Eng.: Malabar nut

**Uses**
- Bronchitis, Asthma: Juice of leaves given internally with honey.
- Stomatitis: Leaves are chewed.
- Worm Infection: Juice of leaves given internally.
- Burning sensation of feet: Apply the juice/extract from fresh leaves all over feet and soles in morning and at bedtime.
- Dry cough: Take 2-3 thoroughly washed tender leaves, boil these in 1 cup of water and reduce it to half. Drink the decoction for 3 days.
- Fever: Crush fistful of fresh leaves and mix in 1 cup of hot water. Strain after 15 min. Take half cup of infusion in morning and evening for 3 days or boil 2-4 root pieces in 4 cups of water, till it reduces to 1 cup. Take the decoction 3 times a day for 3 days.
- Hoarse Throat: Take decoction of half cup crushed leaves, filter it and mix it with 1 tsp of honey and take 2-3 times a day for 2 days.
- Excessive menstruation: Juice of leaves 15 ml with 15 gm jaggery twice daily internally.
- Bleeding piles: Decoction of whole plant with sugar internally.

**Side Effects and Possible Interactions:** Use of this herb is not recommended during pregnancy (except at birth, and then only under the direction of a medical practitioner) Care should be exercised when taking this herb with other drugs or supplements that exhibit expectorant or antispasmodic effects.

2. **Aloe vera** (Syn: *A. barbadensis*) Sans.: Kanyasara Hind.: Ghi-kunwar Eng.: Indian alces

**Uses**
- Abscess: Juice of leaves boiled and applied externally.
- Amenorhagia: Juice of leaves given internally.
- Constipation: Take dried leaf pulp to make powder. Mix 2 pinch of the powder and 2 pinch of turmeric in one fourth cup of water and drink continuously for 3-4 days.
- Liver tonic: Take 2 tsp of juice along with sugar or honey, 3 times a day for 7-21 days.
- Fresh burns and Wounds: Apply pulp over the wound, 2 times daily till it heals.
• Wet cough: Fry 2 tsp of leaf pulp with half tsp of ghee. Take the preparation with little sugar in the morning, noon and evening for 3 days.
• Stomach Ache: Take 1 tsp of leaf pulp, mix it with ¼ tsp each of cow’s milk, harar powder, trikatu and rock salt 2 times a day.

3. **Asparagus racemosus** – Sans.: Satavari Hind.: Shakakul Eng.: Asparagus

   Uses
   • Acidity: Powder of roots given internally with water.
   • General debility: 3 to 5 g of the root powder given twice a day with milk.
   • Urine with burns: Juice of fresh roots given internally.
   • Burning sensation of feet: Crush tubers to extract juice. Apply the Juice in morning and at bedtime till cure.

4. **Bacopa monnieri** – Sans.: Brahmi Hind.: Brahmi Eng.: Thyme leaved gratiola

   Uses
   • Arthritis: Juice of leaves given internally.
   • Bronchitis: Juice of leaves given internally with honey.
   • Nerve tonic: Juice of whole plant given internally.
   • Fever (due to cold): Make decoction of 50gms each of Brahmi and Tulsi leaves in 250ml water and reduce to half. Mix a pinch of black pepper in half cup decoction and take 3 times daily for week.
   • Scanty Urination with burning sensation: Crush the green shoots to extract juice. Take 3 tsp of juice with honey.

5. **Bryophyllum calycinum** Sans.: Parnabija Hind.: Zakhm- haiyat Eng.: Bryophyllum

   Uses
   • Gall bladder stone: 2 to 3 teaspoonful of juice of leaves given internally twice a day.
   • Wounds: juice of leaves applied on wound to check the blood and paste of leaves applied for healing.


   Uses
   Bullets Brain tonic: Leaf juice taken internally. It is a general tonic used in nerveine disorders.

**Uses**
- Conjunctivitis: Flowers mixed with Cow milk and paste it. The paste is applied externally on outer parts of the eyes and juice of leaves dropped in the eyes.


**Uses**
- Abdominal pain: Juice of the leaves 5 to 10 ml given internally.
- Intestinal worms: Pakoda of leaves to be prepared and eaten twice a day.
- Headache: Paste of leaves applied externally on fore head.
- Cough and Cold: Mix ¼ glass of leaf juice & 1 tsp of honey and drink in the morning and evening for 2-3 days or cook the leaves and eat in the evening for 2-3 days.


**Uses**
- Cough & Cold: Black tea is prepared from the leaves and taken 3 to 4 times a day or Crush 4 leaves, take a pinch of peeled ginger and 5 black pepper. Boil the mixture in 2 glasses of water till it reduces to half. Take the decoction (freshly prepared) 2 times a day for 7 days.
- Vomiting: Hot infusion of leaves given internally.


**Bermuda grass Uses**
- Nose bleeding: Juice of whole plant given internally and some drops to be applied in the nose.
- Vomiting: Juice of whole plant given internally with sugar.
- Burning in eyes: Juice of the plant dropped in the eyes.
- Fresh Wound: Apply juice all over the wound 2 times daily.
- Scabies: Make a paste of equal quantities of durva and turmeric powder. Apply on affected parts half hour before bath.


**Shoe flower plant Uses**
- Menorrhagia: 5 to 10 flowers mixed with milk, paste it and given internally twice a day.
- Spermatorrhia (Night discharge): Juice of flowers given with sugar and milk twice a day.
- Urine with burns: 2 to 3g powder of flowers given internally with water twice or thrice a day.

   - Jasmin Uses
     - Ear ache & Puss formation: Juice of the leaves dropped in the ear and applied on the wound.
     - Stomatitis: Leaves are chewed.
     - Rhadges: Juice and paste of leaves boiled in the ghee and applied externally on affected parts.

13. **Jasminum sambac** – Sans.: Mallika Hind.: Belphul motia, mogra Eng.: Arabian jasmine
   - Uses
     - Stomatitis: Petals of the flower chewed.
     - Wound: Paste of leaves applied externally on wound.
     - Burning sensation in abdomen: Paste of flower given internally with sugar and ghee.
     - Fever or cough: Take decoction of flowers or leaves as needed.

14. **Lawsonia inermis** – Sans.: Madayanti Hind.: Mehendi Eng.: Henna
   - Uses
     - Burnings in palm & feet: Paste of leaves applied externally.
     - Headache: Paste of leaves applied externally.
     - Fungal infection: Apply the leaves paste on the affected area in morning and evening for 5-6 days.

15. **Mentha piperata** – Sans.: Pudina Hind.: Podina Eng.: Pippermint
    - Uses
      - Cough, Cold: Boil 5-6 leaves in water and inhaled or leaf juice is taken internally.
      - Abdominal pain, indigetion: Leaf juice is taken internally.
      - Headache: Oil obtained from the leaves is applied over the forehead.

16. **Nelumbo nucifera** – Sans.: Kamala Hind.: Kamal, Pundarika Eng.: Lotous
    - Uses
      - Urine with burns: Decoction of the leaves given internally.
      - Diarrhoea with fever: Powder of flower given internally with honey.
      - Eye diseases: Powder of flower given internally with milk in common eye diseases.

- Fever: Juice of the leaves taken internally.
- Diabetes: Decoction of leaves or stem bark given internally.
- Arthritis: Decoction of leaves given internally.

18. *Ocimum sanctum* – Sans.: Tulasi Hind.: Tulsi Eng.: Holybasil

- Abscess: Paste of leaves applied externally on abscess.
- Fever (Malaria & Influenza): Juice of leaves given internally with pipper powder (2 to 3 seeds) thrice a day.
- Cough & Cold: Tea of leaves given 2 to 3 times a day.
- Worm Infection: Take 3 tsp juice of tulsi leaves, empty stomach in morning to get relieved of worms.
- Conjunctivitis: Take the juice of 5-7 fresh leaves, add 3 drops of honey. Apply 2-3 drops in both eyes at bed time.


- Stomatitis: Paste of the flower given internally with sugar.
- Burning in the stomach: Paste of flower given internally with sugar and milk.


- Acidity: Crush fresh shoots to extract juice. Take 1 tsp juice with honey thrice a day for 7 days.
- Fever: Make decoction with half cup of crushed leaves of vasaka and crushed shoot of giloe. Take 40-60ml of this decoction with 1 tsp of honey 2-3 times a day 1 hour before meals for 3 days.
- Liver tonic: Take the decoction of the leaves 2 times per day for 7-21 days.
- General immunity: Take 4 inches long shoots of giloe, peel the bark, crush and soak in half glass of cold water overnight. Strain the infusion next morning and consume the residue.
<table>
<thead>
<tr>
<th>S.no</th>
<th>Name</th>
<th>Habit</th>
<th>Major chemical Constituents</th>
<th>Reported Pharmacological Activity (based on preclinical in vitro and in vivo studies)</th>
<th>Clinical Trials (based on human studies)</th>
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<tbody>
<tr>
<td>#</td>
<td><strong>Plant</strong></td>
<td><strong>Type</strong></td>
<td><strong>Main Compounds</strong></td>
<td><strong>Pharmacological Effects</strong></td>
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<td>asiatic acid, madecassic acid.\textsuperscript{[34]} and antitubercular activities, Management of venous insufficiency, Anticancer and Immunomodulatory activities.\textsuperscript{[35]}</td>
<td>structural remodeling (in sun damaged skin).\textsuperscript{[39]} Anti-sclerodermic (skin sclerosis).\textsuperscript{[40]} wound healing (in diabetic patients).\textsuperscript{[41]} improvement of skin elasticity (formulation).\textsuperscript{[42]} stabilization of low density femoral plaques.\textsuperscript{[43]} antihypertensive (venous hypertension by triterpenic fraction of C. asiatica).\textsuperscript{[44]} Anti-diabetic microangiopathy (triterpenic fraction of C. asiatica).\textsuperscript{[45]} Immunomodulatory effect (reduced hepatotoxicity in HIV patients by Shilajeet ayurvedic formulation).\textsuperscript{[46]}</td>
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<td>7</td>
<td><em>Clitorea ternatea</em></td>
<td>Climber</td>
<td>Pentacyclic triterpenoids such as taraxerol and taraxerone.\textsuperscript{[47]} Antidiabetic, Anxiolytic, Anti-stress, Antidepressant.\textsuperscript{[47]}</td>
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<td>8</td>
<td><em>Coleus aromaticus</em></td>
<td>Herb</td>
<td>Salvigenin, 6-methoxygenkwanin, quercetin, chrysoeriol, luteolin, apigenin, flavanone eriodictol and flavanol taxifolin, triterpenic acids; oleanolic acid, 2,3-dihydroxyoleanolic acid, eremocarpic acid, ursolic acid, pomolic acid, Antioxidant, leishmania, Urolithiasis, Antiepileptic, Antitumor and Antimutagenic, Neuropharmacological, Radioprotective effect, Antimicrobial, Antibacterial, Antifungal.\textsuperscript{[50]} Productive cough treatment (Kaphajakasa associated with Anorexia and number of cough bouts).\textsuperscript{[51]}</td>
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<td><strong>Plant Name</strong></td>
<td><strong>Type</strong></td>
<td><strong>Chemical Compounds</strong></td>
<td><strong>Pharmacological Activities</strong></td>
<td><strong>Additional Information</strong></td>
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<td>9</td>
<td><em>Cymbopogon citratus</em></td>
<td>Herb</td>
<td>euscaphic acid, tormentic acid and 2,3,19,23-tetrahydroxyursolic acid</td>
<td>Antimicrobial, Antifungal, Antiprotozoal, Anti-oxidant, Anti-diarrheal, Anti-mutagenic, Anti-Inflammatory, Anti-malarial, Anti-nociceptive, Anti-hepatotoxic</td>
<td>Effect on arterial pressure (in hypertensive patients)</td>
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<td>10</td>
<td><em>Cynodon dactylon</em></td>
<td>Herb</td>
<td>myrcene, citral, citronellal, citronellol and geraniol</td>
<td>Antidiabetic, Diuretic, Antioxidant, Antidiarrheal, Antiviral, Immunomodulatory, Antiulcer, Antiarrhythmic, CNS depressant, Hepatoprotective, Wound Healing, Cardioprotective</td>
<td>Menopausal syndrome treatment</td>
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<td>11</td>
<td><em>Hibiscus rosa-sinensis</em></td>
<td>Shrub</td>
<td>Anthocynins and flavonoids (cyanidin-3,5-diglucoside, cyanidin-3-sophoroside-5-glucoside, quercetin-3,7-diglucoside, quercetin-3-diglucoside)</td>
<td>Antispermatic, Androgenic antitumor, Anticonvulsant activities, Antitumor, Antihypertensive, Antioxidant, Antiammonemic, Hypoglycemic activity</td>
<td>Oral contraceptive (flowers)</td>
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<td>12</td>
<td><em>Jasminum officinale</em></td>
<td>Climber</td>
<td>Salicylic acid</td>
<td>Anticancer, Antibacterial, Antifungal</td>
<td>Sedative effects (tea)</td>
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<td>13</td>
<td><em>Jasminum</em></td>
<td>Climber</td>
<td>Jasminin and Antistress, Anti-diabetic, Antidepressant (oil in aromatherapy)</td>
<td>Antidepressant (oil in aromatherapy)</td>
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<td><strong>Nelumbo nucifera</strong></td>
<td>Herb</td>
<td>Gallic Acid.</td>
<td>Aldose reductase inhibitor (Flower), Anti-arrhythmic (Seed) Anti-bacterial (Flower), Anticancer (Leaves), Anti-fertility (Seed), Anti-fibrosis (Seed), Anti-ischemic (Seed), Anti-inflammatory (Seed), Anti-</td>
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<td><strong>Nyctanthes arboristis</strong></td>
<td>Tree</td>
<td>Nicotifrin, nyctantheric acid.(^{[74]})</td>
<td>Hepatoprotective, Antiallergic, Antitryptaminergic, Antibacterial, Antiviral, Antifilarial, Antioxidant, Anti-inflammatory, Antipyretic, Anticholinesterase, Immunopotentiator.(^{[75]})</td>
<td>Antimalarial.(^{[76]})</td>
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<td>17</td>
<td><strong>Ocimum sanctum</strong></td>
<td>Herb</td>
<td>Essential oil containing eugenol, B-caryophyllene, apigenin, apigenin-7-O-glucorondie, vicenin, vicenin-2, luteolin, luteolin-7-O-glucorndie, galuteolin (luteolin-5-O-</td>
<td>Antiasthmatic Activity, Antibacterial Activity, Anticancer Activity, Anticataleptic Activity, Anticonvulsant Activity, Antiemetic Activity, Antihyperlipidemic, Cardioprotective Activity, Antihypertensive Activity, Antistress Activity, Demulcent/Stimulant/Expectorant, Eye Disease, Hepatoprotective Activity,</td>
<td>Antianxiety.(^{[79]}) ophthalmic disorders (eye drop).(^{[80]}) NIDDM (mild to moderate diabetes).(^{[81]})</td>
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DISCUSSION
Growing plants in the kitchen gardens for the ornamental purpose has been age old tradition in India. The mosaic of medicinal cum ornamental herbs, shrubs, climber and even grasses do not require much space and can be planted even in small pots. It is one of the most reliable ways of ensuring access to a healthy diet (free from pesticides and chemicals) in developing countries where nutrition and health care are becoming major issues due to commercialization and population stress. Since, most homes in urban areas are unaware of the richness of India’s flora in general therefore, this study reveals the medicinal importance of kitchen garden plants in day to day life in family healthcare and it will result to be a useful guide to reduce unnecessary expenditure on common ailments. The present literature suggests the role of clinical research (trials) on traditional as well as pharmacologically reported uses of various enlisted plants. Such studies would open a new vista for researchers to explore and carry out various preclinical and clinical trials that would be helpful for the people for its basic healthcare needs.

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