Medicinal Plants of submontane forest in a part of Tarai and Bhawar of Kumaun Himalaya

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Abstract: The medicinal properties of forest vegetation was analyzed in a submontane forest of Tarai and Bhawar of Kumaun adjacent to Kashipur, at (29º 14-43.6)–(29º 19-50.5) E longitude and (79º 03-22.6)–(79º 04-23.2) N latitude at an elevation of 253.4–265.5 meter above the sea level, within the districts of Nainital and Udham Singh Nagar. 29 plants species belonging to 22 family, 26 genera, and 29 species were reported. Of these leaves in 19% cases, roots and whole plants in 16% cases, fruits and bark 13% cases are used. Based on life form 17 phanerophytes, 5 chamaephytes, 4 therophytes, 2 hemicyryptophytes and 1 therophyte were recorded.

Key Words: Ethnomedicinal, Kumaun Himalaya, Medicinal plant, Submontane forest, Tarai and Bhawar.

1. Introduction

The use of plants in curing and healing is as old as man himself (Hedberg, 1987). All cultures have folk medicine traditions that include the use of plants and plant products. The World Health Organization (WHO) estimates that 4 billion people or 80 percent of the world’s population use herbal medicine for some aspect of primary health care. According to Ved Prakash (1998), more than 20,000 species of higher plants are used as medicines in the traditional treatment practices of indigenous cultures living around the world. Investigations on growth performance of medicinal plants have gained adequate attention in India. Ethnomedicinal studies on vegetation in tribal areas have been carried out by Chopra (1980), Sangai (1995), Shylaja et al. (1996), Bargali (1997), Chauhan et al. (1997), Jamwel and Kaul (1997), Karikanthimath et al. (1997), Manian and Gopalkrishnan (1997), Pandey et al. (1998), Singh and Singh (1998), Bargali et al. (2003), Natrajian and Paulsen (2000), Maruthi et al. (2000), Samvastar and Diwanji (2000), Hebbar et al. (2004), Vijayan et al. 2004, Chhetri et al. (2005), Kala (2005), Dobhal et al. (2007), Semwal et al. 2010 and Joshi (2011).

There are about 1500 to 2000 species with known medicinal worth in India, which support an estimated 5000 indigenous drug manufactures, which make about 2000 preparations in different parts of the country. It is believed that 80% of the raw material requirement is met from the forest only (Chopra, 1994).

Present study provides some information on medicinal property of submontane forest vegetation reported in a part of Tarai and Bhawar of Kumaun Himalaya.

2. Geographical Location

3. Material and Methods

In present study, the information about plants was obtained by frequent field visits, from experience of personals of forest department and the local natives (older household and women). Lists of medicinal plants that are being traditionally used by the local people of area have been prepared. The plants were identified with the help of a plant taxonomist and the forest flora of Kumaun (Osmoston, 1926), Flora Simlensis (Collet, 1971), Flora Nainitalensis (Gupta, 1968) and Flora of Mussoorie (Raizada, 1978).

4. Results

29 plants along with family, common name, vegetation type, plant parts used, active constituents, life form and medicinal uses are described below:

- Acacia catechu Willd.
  Family: Mimosaceae; Common Name: Kattha, Khair; Vegetation Type: Tree; Plant parts: Wood; Constituents: Tannins; Life form: Phanerophyte.
  Use: Diarrhoea, cleaning mouth and gums.

- Aegle marmelos (L.) Correa
Family: Rutaceae; Common Name: Bel; Vegetation Type: Tree; Plant parts: Fruits; Constituents: Carbohydrates, Tannins; Life form: Phanerophyte.
Use: Diarrhoea, dysentery, digestive, appetizer and tonic.

Family: Asparagus racemosus Willd.
Use: Antioxidant and galactagogue activity.

Family: Bauhinia malabarica Roxb.
Use: Vermifuge and antispasmodic.

Family: Biophytum sensitivum Zucc.
Use: Antipyretic and swelling of body.

Family: Boerhaavia diffusa L.
Use: Diuretic, antipyretic and swelling of body.

Family: Cassia fistula L.
Use: Sedative and antiemetic.

Family: Centella asiatica (L.) Urb.
Use: Brain tonic, anti-anxiety and anti-stress.

Family: Cuscuta reflexa Roxb.
Use: Vermifuge and heart tonic.

Family: Ficus racemosa L.
Use: Pyorrhoea and cleaning mouth and gums.

Family: Ficus religiosa L.
Use: Cough and bronchitis.

Family: Justicia adhatoda Nees
Use: Cough and bronchitis.

Family: Kachnar; Vegetation Type: Tree; Plant parts: Leaves and Bark; Constituents: Alkaloids; Life form: Chamaephyte.
Use: Antineoplastic agent.

Family: Kariappa; Vegetation Type: Tree; Plant parts: Whole Plant; Constituents: Alkaloids; Life form: Chamaephyte.
Use: Antiseptic, diaphoretic and expectorant.

Family: Lajalu; Vegetation Type: Herb; Plant parts: Roots and Leaves; Constituents: Tannins; Life form: Therophyte.
Use: Diuretic, antipyretic and anti-inflammatory.

Family: L. Roxb.
Use: Sedative and antiemetic.

Family: Malvaceae; Common Name: Semul; Vegetation Type: Tree; Plant parts: Flower, Gum and Root; Constituents: Tannin, Carbohydrates and Fatty Acids; Life form: Phanerophyte.
Use: Laxative and skin disorders.

Family: Murraya koenigii Spreng.
Use: Blood disorders, piles and gonorrhea.

Family: N. L. H. Herit.
Use: Pyorrhoea and cleaning mouth and gums.

Family: Olea europaea L.
Use: Cough and bronchitis.
**Rauwolfia serpentina** Benth.
Family: Apocynaceae; Common Name: Sarpgandha; Vegetation Type: Herb; Plant parts: Roots; Constituents: Alkaloids; Life form: Therophyte.
Use: Malaria.

**Ricinus communis** L.
Family: Euphorbiaceae; Common Name: Arandi; Vegetation Type: Tree; Plant parts: Seeds; Constituents: Fixed Oils; Life form: Phanerophyte.
Use: Laxative.

**Terminalia arjuna** W & A.
Family: Combretaceae; Common Name: Arjun; Vegetation Type: Tree; Plant parts: Bark; Constituents: Tannins; Life form: Phanerophyte.
Use: Cardiac disease, diuretic and astringent.

**Terminalia bellerica** Roxb.
Family: Combretaceae; Common Name: Bahera; Vegetation Type: Tree; Plant parts: Fruits; Constituents: Tannins; Life form: Phanerophyte.
Use: Diarrhoea and dysentery.

**Terminalia chebula** Retz.
Family: Combretaceae; Common Name: Harar; Vegetation Type: Tree; Plant parts: Fruits; Constituents: Tannins; Life form: Phanerophyte.
Use: Diarrhoea and dysentery.

**Vitex negundo** L.
Family: Verbenaceae; Common Name: Simalu; Vegetation Type: Shrub; Plant parts: Whole Plant; Constituents: Alkaloids; Life form: Phanerophyte.
Use: Rheumatic arthritis, mental disorder and backache.

**Zingiber capitatum** Roxb.
Family: Zingiberaceae; Common Name: Ban Haldi; Vegetation Type: Herb; Plant parts: Roots and Rhizome; Constituents: Alkaloids; Life form: Geophyte.
Use: Antiseptic and used in skin care.

5. Discussion

Based on extensive survey, frequent field visit and interviews it was found that nearly 29 plants species belonging to 22 families, 26 genera, and 29 species are being used by people to care various diseases. Of these leaves in 19% cases, roots and whole plants were used in 16% cases, fruits and bark 13% cases (Fig. 1.00) were used. Based on life form 17 phanerophytes, 5 chamaephytes, 4 therophytes, 2 hemicyryptophytes and 1 therophytes were recorded. Most of the species identified as medicinal plants are trees in comparison to herbs and shrubs. Bargali et al. (2003) studied 22 medicinal plant species in Jagdalpur district of Chhattisgarh. Chhetri et al. (2005) reported that the tribal people of Sikkim and Darjeeling Himalayan region in India utilized 37 species of plants belonging to 28 different families as antidiabetic agents. Dobhal et al. (2007) studies 29 species of medicinal plants distributed in 28 genera and 20 families. Vijayan et al. (2004) reported different parts of 18 medicinal plants belonging to 14 different families used in the traditional system of medicine collected from Nilgiris were tested for their antiviral activity.
6. Conclusion

The use of plants as medicinally is found in the Rig Veda. Information on the use of medicinal plants is found in books. Excessive use of allopathic medicine, peoples are unaware about the importance of plants as medicinally. Kapoor and Mitra (1979) estimated that about 540 plant species are in use in different formulations in India. Present time younger generation does not take interest in these plants and there is a possibility of losing this knowledge in future. Therefore, this study purposeful for making interest about the use of plants as medicinally likes local tribal and this study will also helpful for new researchers for finding other unknown uses of these plants.

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