

Traditional medicinal aspects of some plants of Kinnaur and Lahaul Spiti tribal habitat of north west Himalayan region of H.P.: a review

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Abstract

Plant plays significant role in the life span of human beings. They are helpful to satisfy the basic needs of human beings. They are traditionally used by rural tribal communities for food, shelter clothing, religious and mainly for herbal medicine for treatment of various health problems prevailing in tribal areas. The tribal peoples of North Western Himalayan region of H.P has good faith on traditional herbal remedies for treatment of health problems. These people have great traditional wisdom of herbal potential local plants tribal habitat and their mode of administration of herbal drug and utilization of plant parts and products to cure various disease. This paper reviews the work on traditional wisdom about the utilization of herbal potential of some common plants of tribal habitat of Kinnaur and Lahaul Spiti of North Western Himalayan region of H.P. The Kinnaur tribes which are inhabitants of district Kinnaur of Himachal Pradesh uses some plants of this tribal habitat for traditional health practices such as root decoction of *Aconitum heterophyllum* is used in case of stomach problems, bark powder of *Betula utilis* is used to cure epilepsy, the leaves of *Fagopyrum esculentum* is used traditionally for treatment of pain due to rheumatism. There are some plants which are found in tribal habitat and cold desert of Himachal Pradesh which are traditionally used by tribal communities of Lahaul and Spiti for treatment various ailments such as *Achillea millefolium* is used to cure hepatic disorders, *Hyoscyamus Niger* plant is used in case tooth problems, *Waldhemia tomentosa* plant is used to cure pain in joint and in rheumatic problem. Due to advancement in technology and modernization in life style, the traditional knowledge about the herbal potential of plants is eroding day by day. So, it is the need of hour to conserve and document this traditional wisdom and also transmit this traditional knowledge from one generation to another technologically.

Keywords: herbal potential, north western Himalaya

Introduction

Tribal habitat of Himachal Pradesh is a great hot spot of knowledge and experience which are accumulated about the local floristics and faunal diversity. It is believed that the traditional knowledge is developed after the observation of many years and through trial-and-error method. The Lahaul and Kinnaur district which lies in the north was considered as cold desert of Himachal Pradesh. Among all the states of India Himachal Pradesh is located in the northern region. Which is rich in art culture and folk and lies in the North Western Himalayan region. This state is regarded as a great reservoir of plants with herbal potentials and is an abode of diverse things and tribal communities such as Gaddis, Gujjars, Kinnaur or Kanours, Jads, Lahaulis, Pangwals and Swangals due to variation in their socio-economic and socio culture condition. Which has been preserved and practiced for centuries for ethnobotanical point of view (Sood *et al.* 2001) [31]. Lahaul-Spiti and Kinnaur are the district of Himachal Pradesh which are entirely considered as tribal areas of Himachal Pradesh. Which are quite rich of floristic diversity with herbal potential. There are two types of tribes found in the Lahaul-Spiti district named as Lahaulis and Spitians and due to presence for more than six months. In year this area regarded as cold desert. Tribes of Lahaul - Spiti such as Gaddis, Swangla, Bhot etc. Uses the local plant to fulfill their life requirements. The information of www.dzarc.com/phytology

utilization of local plants traditionally is yet connected with tribal communities. Their wisdom related to the utilization of plants for daily life activities show their interest, awareness and their dependence on the local plant diversity. The wild plant is utilized for various purposes from centuries due to changes and development in human culture progressively (Sood *et al.* 2001) [31]. Kinnaur district lies in the alpine and subalpine Himalayan region of Himachal Pradesh which having dominancy of Kinnaur tribal communities known as "Kinnaur Society". Due to heavy snowfall during certain periods of year and difficulty in accessibility, these areas lack medical facilities, so these Kinnaur tribal communities only depend on traditional herbal remedies to cure various diseases and health ailments prevailing in that tribal area. These tribal people having great reservoir of traditional wisdom related to utilization of plant parts or product in the form of herbal folk remedies for health care system (Rawat & Kharwal, 2011) [23]. This paper reviews the work on traditional medicinal aspect of some plants of Lahaul-Spiti and Kinnaur tribal habitat of Himachal Pradesh which are utilized by tribal communities of Kinnaur and Lahaul-Spiti district to cure various diseases prevailing these tribal habitats.

Study Area

Kinnaur and Lahaul Spiti are tribal habitat found in Himachal

Pradesh which is known as cold desert due to presence of snow more than certain periods of a year. Kinnaur lies in the eastern parts of northern western Himalayan region of H.P This district is situated 77° 45 - 79° 04. East longitudes and 31° 55 - 32° 05 North latitudes This district share its eastern boundary with Tibet. The main river of this district is Satluj and this district having number of valleys with altitude variations from 1000 meter to 5000 meter. Lahaul spiti district is that tribal area of Himachal Pradesh which lies between latitudes 32° 93 - 32° 59 northern latitudes and 76° 49 -77° 47 eastern longitudes. These tribal regions having unique and diverse vegetation form with herbal potential. This paper revealed the use of 20 medicinal plant species traditionally of study area which are used traditionally by tribal communities to cure health problems in the form of household folk herbal remedies.

Observations and Results

(1) *Achillea millefolium* Linn.

Family: Compositae (Asteraceae)

Local name: Birnjasif, Gandana, Yarrow

Parts used: Leaves, flower, Whole plant

Folk uses: The extract prepared from its aerial plant parts with water is used to treat hepatic problems and also in case of fever. Fresh leaves are chewed to cure tooth problems Decoction of flower tops and leaves is used as health tonic for vigor, gastric problems and also good in case of fever. The extract of whole plant material with jaggery is taken three times a day for one week to cure painful and bleeding. Decoction of whole plant material is beneficial for inflammatory conditions, tooth problems and mostly in case of urinary complaints. Srivastava *et al.* (1992) [32], Sharma & Lal (2005) [28], Chauhan, N.S. (2006) [8], Angmo *et al.* (2012) [1].

(2) *Aconitum heterophyllum* Wall.ex. Royle.

Family: Ranunculaceae

Local name: Atish, Bonga, Boa, Patish

Parts used: Root & Whole plant

Folk uses: Decoction of root with honey or jaggery and water is used to cure stomachache. Root extract is taken orally thrice a day for one week incase digestive problems, piles and used to expel intestinal worms. This extract is also good to cure diabetes. Decoction prepared from its dried root powder with water and honey to cure pain in lower abdomen and also useful in case of chronic diarrhea and dysentery. Root extract is used for stopping the mensuration cycle and incase of throat ulcer, hysteria and headache. Root of this plant possesses antimalarial properties.

Chopra *et al.* (1956) [9], Anonymous (1986b) [3], Jain (1991), Sood *et al.* (2001) [31], Chauhan, N.S. (2006) [8], Guleria & Vasisth (2009) [15], Kaur *et al.* (2011) [17], Devi & Thakur (2011) [10], Dutt *et al.* (2011) [11].

(3) *Arnebia euchroma* (Royle) Johnston, *contr.*

Family: Boraginaceae

Local name: Ratanjot, Khamet, Dimo

Parts used: Roots & Whole plant

Folk uses: Roots of this plant possess antiseptic properties and its paste is applied as emollient to heal open wounds, cuts and burns. Dried powdered root is taken with lukewarm water two times a day for the purification of blood, body pain and used as

brain tonic for enhancing memory and hair tonic for the best growth of hair and hair falling problem. The whole plant material extract is beneficial for the treatment of cancer. This extract is used as ear drops to cure ear ache, for the treatment of teeth problems, & for healing open wounds or injuries.

Anonymous (1986b) [3], Rawat and Pangtey (1987) [24], Sood *et al.* (2001) [31], Chauhan N S (2006) [8], Devi & Thakur (2011) [10].

(4) *Artemisia maritima* L.

Family: Asteraceae

Local name: Nyurcha

Part used: Leaves, Whole plant

Folk Uses: The paste prepared after crushing it's dried whole plant material with water is used in case of snake bite as an antidote and also for scorpion sting This paste is also having antiseptic properties and used for healing open wounds, burns and cuts. Dried powder of its leaves is taken orally with lukewarm water to cure Cough, stomach ache, gastric problems, for purification of blood and is used to expel intestinal worms The extract of its leaves is beneficial for fever. The paste of leaves is applied as emollient to cure rheumatism and foe skin infection.

Aswal and Mehrotra (1984B) [5], Sood *et al.* (2001) [31], Chauhan, N.S. (2006) [8], Devi & Thakur (2011) [10], Fahad & Bano (2012) [12].

(5) *Bergenia stracheyi* (Hook f. & Thoms) Engl.

Family: Saxifragaceae

Local name: Pashanbheda, Pakhanbed, Gatikpa, Shilpada

Part used: Bark, Rhizomes and Root

Folk Uses: The poultices of its root are used in case of joints pain due to stiffness. Root extract is used in case of kidney stone and also used to cure gynecological problem such as menorrhagia. Powder of its raw root is beneficial for treatment of diarrhea and dysentery. The paste of its root and rhizome used as antiseptic for burns, cuts and wounds. and also applied to cure boils and eye problems such as Ophthalmia. Root decoction is also used as health tonic for vigor. Bark of this plant possess antiseptic properties.

Chopra, *et al.* (1956) [9], Koelz (1979) [19], Gaur *et al.* (1983) [13], Anonymous (1984) [2], Srivastava *et al.* (1992) [32], Sood *et al.* (2001) [31], Chauhan, N.S. (2006) [8], Rawat & Kharwal (2011) [23].

(6) *Betula utilis* D. Don.

Family: Betulaceae

Local name: Bhojpatra, Bhurjapatra, Bhuj, Bhooj, Bhurjagranthi, Brich.

Part used: Papyery bark

Folk uses: The bark extract is useful in case of blood disorders such as anemia, Skin problems mainly for leprosy and incase of bronchitis and convulsions. This decoction is also beneficial in case of hysteria and urinary problems. The bark extract is used as vaginal douches to avoid conception. The ash of its bark applied in the form of paste to cure rheumatism. The bark has antiseptic properties and used to heal the injuries and wounds. The dried bark powder with lukewarm water to avoid pregnancy because of antifertility activity of bark.

Asolkar *et al.* (1992) [4], Sood *et al.* (2001) [31], Sharma *et al.*, (2005) [27], Chauhan, N S (2006) [8], Thakur (2011) [33].

(7) *Carium carvi* Linn.**Family:** Umbelliferae**Local name:** Shia–Zira, Carway**Part used:** Fruit, Seed**Folk uses:** Fruit is useful in case of stomach pain, flatulence and also to cure blood disorders. Fruit powder is useful to heal the open wounds due to presence of antiseptic properties in the fruit. Decoction of seeds is used as tonic to cure body pain and weakness of the body. Dried powder of seed with warm water is taken orally two times a day to cure digestive disorders.Srivastava *et al.* (1992) [32], Chauhan, N.S. (2006) [8], Sood *et al.* (2001) [31], Devi & Thakur (2011) [10] Rawat & Karwal (2011) [23].**(8) *Ephedra gerardiana* Wall****Family:** Gnetaceae**Local name:** Asmania, Budagur, Buchchur, Chhe, Khanda phag, Somlata**Part used:** Leaves, Stem, Root, Twigs, Fruit, Whole plant**Folk uses:** The tribal of Lahaul spiti uses fresh twigs of this plants as tooth brush for scouring teeth. Decoction of prepared from its dried powder of whole plant material with boiled water is taken three times daily for one week to cure hepatic disorders and to cure weakness due to liver disorders. Powered whole plant material is taken with lukewarm water for three days daily two times to purify blood. The extract prepared from its leaves are used to cure asthma, cough and fever. The powder of is dried twigs is used mainly for asthmatic and allergic problem. The fruit of this plant is beneficial for infection in respiratory tract. Leaves are good for cardiac problems. The extract of its stem and root is useful Asthma, bronchitis, pneumonia, syphilis and rheumatism and hepatic problems. Dried powder of whole plant material is taken with lukewarm water in case of cough as expectorant and bile and food complaints.Srivastava *et al.* (1992) [32], Sood *et al.* (2001) [31], Chauhan, N.S. (2006) [8], Devi & Thakur (2011) [10] Fahad & Bano (2012) [12].**(9) *Fagopyrum esculentum* Moench****Family:** Polygonaceae**Local name:** Oglu Kathu, Bhares, Buckwheat**Part used:** Leaves, Root, Fruit**Folk uses:** The paste of its Leaves are applied as emollient in case of rheumatism or joint pain. Decoction of the root is taken three times a days for one week to cure infection in lungs, pain due to rheumatism, typhoid and urinary. Fruit of this plant is beneficial for cardiac problems such as for treatment of fragility in the blood capillaries of heart.Sood *et al.* (2001) [31], Chauhan, N.S. (2006) [8], Thakur (2011) [33], Rawat and Kharwal (2011) [23], Kumar *et al.*, (2015) [18].**(10) *Hippophae rhamnoides* Linn.****Family:** Elaeagnaceae**Local name:** Chharma, Sarla, Tarpu, Triku, Seabuck thron**Part Uses:** Fruits, Seeds, Whole plant**Folk Uses:** The fruit of this plant is beneficial for respiratory problems such as in case of pulmonary infection and tuberculosis. Infusion of its fruit is given to children as health tonic to improve body weakness. Seed powder with water is used against digestive problems. Seed powder with water is

beneficial for viral diseases. fruit of this plants having anticancerous property. So, it is used for treatment of cancer and tumor. The paste prepared from whole plant material is applied in case of sun burn.

Sood *et al.* (2001) [31], Chauhan, N.S. (2006) [8], Devi & Thakur (2011) [10], Rawat & Kharwal (2011) [23], Fahad & Bano (2012) [12].**(11) *Hyoscyamus niger* Linn.****Family:** Solanaceae**Local name:** Dhandura, Dipya, Parasikayavani, Khurasani ajwain**Part used:** Bark, Dried leaves, Flowers, Seeds**Folk uses:** Decoction of its bark is beneficial for treatment of cancer and tumor. The paste of its seeds are used by local traditional healers incase irritation in boils and pain in teeth. The extract prepared form it's aerial plant parts such as leaves, shoots and also seed is useful to cure asthma, bronchitis, whooping cough, depression, muscular spasms, nervous disorders, sleeplessness and urinary problems due to the presence of alkaloid such as hyoscyamine, hyoscyne, or scopolamine. Smoke of its burning seed is useful treat bacterial infection in teeth.Srivastava *et al.* (1992) [32], Sood *et al.* (2001) [31], Devi & Thakur (2011) [10], Rawat & Kharwal (2011) [23].**(12) *Podophyllum hexandrum* Royle.****Family:** Podophyllaceae**Local name:** Bankakri, Omo- Shey**Parts used:** Fruit, Rhizome, Roots**Folk Uses:** Decoction of its powdered roots is taken daily two times a day for five days to cure constipation which is chronic. It's rhizome and roots are crushed and its extract with water is given to the patients in case of liver disorders. Decoction prepared from its pulverized fruits is taken orally twice a day for one week to cure respiratory problems mainly Cough and tuberculosis. Decoction of root is also beneficial for cancer treatment.Chopra *et al.* (1956) [9], Sood *et al.* (2001) [31], Chauhan, N.S (2006) [8], Dutt *et al.* (2011) [11], Guleria & Vasishth (2009) [15].**(13) *Prinsepia utilis* Royle****Family:** Rosaceae**Local name:** Bhekhal, Bhenkal, Biklain**Part used:** Seed**Folk Uses:** Oil extracted from its seed is used for massage in case of joint pain, Rheumatism and sprain. Dried seed powder with lukewarm water is used to cure dysentery and diarrhea.Chauhan, N.S. (2006) [8], Kaur *et al.* (2011) [17], Dutt *et al.* (2011) [11], Rawat & Kharwal (2011) [23], Rana and Masoodi (2014) [22].**(14) *Rhododendron anthopogon* D.Don.****Family:** Eriaceae**Local name:** Dhoop, Nichni, Nera, Rattanbat, Talispatra.**Parts used:** Flowers, Leaves**Folk uses:** Tea prepared from its flowers is useful to cure respiratory problems such as Cough, throat infection and also in case of bronchial asthma and chronic bronchitis. The paste of its leaves is also useful incase skin infections. Leaves are useful to activate the central nervous system and act as stimulant.

Chauhan, N.S., (2006)^[8], Srivastava *et al.* (1992)^[32], Dutt, *et al.* (2011)^[11], Rawat & Kharwal (2011)^[23].

(15) *Swertia chirayita Buch - Ham.*

Family: Gentianaceae

Local name: Bhunimba, Chirata, Chirayta

Parts used: Leaves, Whole plant

Folk uses: Decoction of Its roots and stem is useful to cure cough, cold and high fevers, problems in passing stool, diarrhea dysentery and anal disorders. Dried powder of whole plant material is used as health tonic for body weakness, for anemia, bronchial asthma and also used to expel intestinal worms from body. Juice of its leaves is good herbal remedy to cure diabetes. Chauhan, N.S. (2006)^[8], Guleria & Vasishth (2009)^[15], Rawat and Kharwal (2011)^[23].

(16) *Taraxacum officinale Wigg*

Family: Compositae

Local name: Dugdapheni, Dulal, Barau, Kanphul, Sarkhen, Quanti

Part used: Leaves, Rhizome, Roots

Folk uses: Decoction of roots is useful for blood purification, hepatic and kidney problems. The extract of leaves is good for epilepsy, hysteria, muscular spasms, nervous disorders and for treatment of kidney stones. The paste of its whole plant material is useful in case of snake bite and also to heal wounds. Tribal of Lahaul Spiti used its fresh leaves paste on cuts and injuries. The paste of roots is applied as emollient in case of dog-bite. Rhizome of this plant is boiled in water and its extract is taken orally two times a day for one week to cure complaints including jaundice and Hepatitis. The paste of leaves is also applied in case of boils, joint pain, swollen parts and for massage in case of sprain.

Sood *et al.* (2001)^[31], Sharma & Lal (2005)^[28], Chauhan, N. S. (2006)^[8], Kumar & Choyal (2012)^[20], Singh & Thakur (2014)^[30], Kumar *et al.* (2015)^[18].

(17) *Thymus serpyllum Linn.*

Family: Labiatae

Local name: Banajwain, Lepto, Lepte, Masho, Hasha, Pangduma, Padumba

Part used: Flowers, Leaves, Seeds, Whole plant

Folk Uses: The extract prepared from whole plant with water and honey is used to cure cold, cough, fever and Stomachache. it's flowers having anthelmintic properties, so decoction of its flower with sugar is used to expel intestinal worms from body. This extract is also beneficial to cure flu, colds, sore, throat, cough, bronchitis, chest infections and sinusitis. Tea prepared from its aerial plant parts are useful in case of constipation, stomach ache and other digestive problems. Leaves extract with jaggery is used in case of urinary problems. Decoction of flowers and leaves are used to cure epilepsy, urine suppression, Catarrh due to mensuration and for whooping cough. The paste of its leaves are beneficial for itching, sunburns and in eruption of skin. Seed also possess anthelmintic properties so used as vermicides.

Chauhan, N.S. (2006)^[8], Sharma *et al.* (2005)^[27], Fahad & Bano (2012)^[12], Dutt *et al.* (2011)^[11], Rawat & Kharwal (2011)^[23].

(18) *Urtica doica Linn.*

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Family: Urticaceae

Local name: Bichhua

Parts used: Leaves, Root, Stems

Folk uses: The decoction prepared from its stem and leaves is taken daily three times for four days to cure uterine hemorrhage, nose bleeding and bloody vomiting. This extract having antiviral properties. So, it is also good for viral infections. The paste of its stem and leaves are applied in case of sciatica and rheumatism. Roots possess antiseptic properties and hence its paste are applied as emollient to heal open minor wounds.

Singh & Thakur (2014)^[30], Kumar *et al.* (2015)^[18].

(19) *Valeriana jatamansi Jones.*

Family: Valerianaceae

Local name: Tagar, Sungandhbala, Mushkbala., Tagar

Part used: Roots

Folk uses: Decoction of root is taken orally twice a day for one week in case of anxiety due to nervous disorders, insomnia, headache, as antispasmodic, for bowel movement, cramps due to heavy and painful mensuration and also in case of stomach pain.

Sharma & Lal (2005)^[28], Chauhan, N. S. (2006)^[8].

20) *Waldhemia tomentosa (Decne) Regel*

Family: Asteraceae

Local name: Solopo

Part used: Whole plant material

Folk Uses: The paste of whole plant material is applied as emollient in case of pain in joints, arthritis and rheumatism.

Chauhan, N. S. (2006)^[8], Srivastava *et al.* (1992)^[32].

Discussion & Conclusion

This paper reviews the herbal potential of 20 plant species which are employed by tribal communities of Kinnaur and Lahaul Spiti as folk herbal remedies to cure various health problems such as digestive, respiratory, liver, kidney cardiac and urinary problems etc. The plants such as *Ephedera gerardiana*, *Hyoscyamas niger* and *Thymus serpyllum* is used for respiratory problems such as asthma, bronchitis, Cough, pneumonia and whooping cough etc. The plants such *Hippophae rhamnoides* has anti-cancerous property, *Swertia chirayta* having anti-diabetic potential, *Taraxacum officinale* for liver and kidney complaints etc. Most of plant based herbal drug are administered in the form of extract, decoction, infusion, emollient and as herbal tea. The tribal communities of these tribal habitats having faith on nature and power of natural resources. So, they believed that traditional herbal home remedies are the solutions of all health problems prevailing in that area. Due to overexploitation, trade of medicinal plants products, habitat destruction naturally or through anthropogenic activities, these plant resources are in danger of destruction or extinction. Thus, for the benefit of future generations, it is necessary step to conserve these plants resources which having medicinal value and documents the traditional knowledge associated with these medicinal plants which will be helpful for future scientists or researcher to discover new herbal drug.

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