CHAPTER: II

Review of Literature

This chapter of the thesis stresses on the work done in the field and a review of the related literature was arranged as per the year of publication of the work. The latest information is kept earlier and arranged as per chronological order. The literature surveyed is bifurcated into four divisions viz: Traditional Knowledge, Medicinal Plants diversity in India, Medicinal Plant diversity in Western Himalayas and Traditional Health care systems.

2.1. Traditional Knowledge:

Blah and Joshi (2013) selected and standardized a total of 80 different most preferred recipes of vegetarian and non-vegetarian types. The nutritive value of the food also incorporate the nutritional contribution made by wild edible fruits, berries, nuts, roots and spices, edible green leaves including salad and chutney consumed by the ethnic tribes as a part of the whole meal. The whole meal taken together makes a good balanced diet in the tribal food habits.

Jamal et al (2012) documented the traditional folk recipes by using medicinal plants among the inhabitants of Kaghan valley, Northern Pakistan. 30 different folk recipes were documented in order of recipe preparation, dosage and parts used for cure of various diseases. A total of 30 plant species used in preparing these recipes.

Egeru (2012) examined the role of Indigenous Knowledge in climate change adaptation in Uganda with special focus on the Teso sub-region. Local observations confirmed altered climate patterns noticeable from the changes in the planting, weeding and harvesting periods in agriculture, in tree growth and in wind directions. Farmers still observe the intensity of East-West blowing winds, colour of the clouds in the East and plant traits for rainfall prediction.

Mushroom provides a rich addition to the diet of the Kaani tribe in the form of proteins, vitamins, potassium, sodium, phosphorus and iron with low fat content. As the normal diet of Kaani people is starch dominated, the mushroom provides a balanced diet, even though it is a seasonal
food. Mushroom contains a host of defense potentiators, which stimulate the immune system of humans. These mushrooms provide rich resources for the gene banks (Davidson et al, 2012).

In India, various fermented foods including idli, dosa, dhokla, wadi, imarti, rabadi, doli ki roti etc. are prepared and consumed. “Doli ki Roti”- an indigenously fermented wheat based bread is prepared by the Indian Punjabi Community migrated from Western Pakistan at the time of partition. As the fermentation is carried out in an earthen pot locally know as ‘doli’ so the name ‘doli ki roti’ is derived. Traditionally the inoculums of this bread used to be prepared in the temples and distributed to community to prepare this bread on some special occasions. Combination of cereal and legumes in this roti improves the protein quality of vegetarian meal (Bhatia and Khetarpaul, 2012).

Like fermented foods, India has a place in the world culinary scene with some of the finest cuisines being offered for people. There are several culinary dishes passed on from generations to generations and adapted over a period of hundreds of years. Jalebi is a popular Indian sweet and has evolved its ubiquitous sweet over several centuries (Pagote and Jayaraj, 2012).

Yumnam and Tripathi (2012) reported that the ‘Meitei’ the valley inhabitant of Mnaipur have the tradition of eating raw leaves, young inflorescences, tender stalks and other plant’s part with their indigenous sauce ‘Ametpa’ or with indigenous dish ‘Eromba’ or as an ingredient of indigenous salad ‘Singju’ with the main course of food. They reported 64 plants belonging to 46 genera and 25 families. As per the local people, they obtained medicinal benefits from these plants in this mode of eating.

Dixit and Goyal (2011) reported that the elders are known to be the storehouse of traditional values, skills and morale. They discussed the Traditional Knowledge of elderly people, their role and highlight many areas where it can be useful for elderly themselves. Some insights are offered for strategic utilization of Traditional Knowledge and experience of elderly to address the need and improve the quality of elderly life in terms of socio-psychological cultural, economic and health aspects.

Aluede and Ibekwe (2011) examined the trio, man, drum and music as God’s direct and indirect creations and their collective significance in music healing using experiences from Nigeria.
Their attributes and discusses them within the general framework of indigenous beliefs in non-western music healing traditions.

Most traditional African cultures believe that to maintain health and vitality of human beings, they have to address forces in both the natural and the spiritual world. The study uses a combination of primary and secondary data sources to identify the strengths, weakness, opportunities and threats of the traditional health system. It presents some concepts and practices, some characteristics of indigenous knowledge transfer system and some aspects of their link with the Western health care system (Neba, 2011).

Rural women constitute a store house of Traditional Knowledge. The rich variety of traditional foods served to the rural women specifically at pre- and postnatal stages. The information pertaining to ingredients used, method of preparation, frequency of consumption and logic behind consumption of these food preparations provided by Kanwar and Sharma (2011).

The Himalayan range of Nepal is affluent with vast diversity of medicinal plants. Due to insufficient supplement of modern allopathic medicine and the traditional believe of ethno-medicinal therapy, still vast majority of Nepalese people are dependent on indigenous use of medicinal plant. Use of Nepalese Himalayan medicinal plants is not only limited to erogenous use of Nepal Himalaya but also regarded as chief ingredients in Eastern medicinal system including Ayurveda of Indian subcontinent, Traditional Chinese Medicine, Korean Oriental Medicine, etc. But due to the lack of efficient pharmacological investigation, Himalayan plant diversity is still limited to their ethno-medicinal uses. Vigorous pharmacological investigation is mandatory to explore their therapeutic potential (Gaire and Subedi, 2010).

Indigenous people who live close to natural resources often observe the changes around them and are the first to adapt to these. The appearance of certain birds, mating of certain animals and flowering of certain plants are all important signals of changes in time and seasons. These are well understood in the traditional knowledge systems. Indigenous people have used biodiversity as a buffer against variation, change and catastrophe, in the face of plague, if one crop fails, another will survive (Chaturvedi, 2010).

India has one of the oldest, richest and most diverse cultural traditions associated with the use of medicinal plants. Uses of the herbs as a medicines and food supplements date back to the very
ancient periods of the known human history. Ayurveda herbs or Indian herbs have been used since thousands of years to produce herbal remedies. Nowadays it is a well established fact that herbal remedies are more suitable to human body; an isolated chemical medicines (Natural herbs and natural extracts, 2009).

Sood and Sharma (2009) conducted the study on 120 rural and urban homemakers and revealed the study of their knowledge regarding indigenous resource management practices. There was significant difference among rural and urban families for indigenous practices for drying grain before storage, grain storage equipment, potato storage in basket, disposal of waste water in household drain, disposal of degradable waste, protecting clothes from insects, spraying medicine for flies, treatment of minor wounds and burns and use of medicine for boils.

As per the Exotic Naturals, Mumbai, India (2009) - “Incorporating the teachings of the Vedas in regular school curriculum thus preparing our young minds to face the challenges of life in the modern society and at the same time understand the true meaning of life that is well documented in our ancient Indian scriptures.”

A number of plants existing in India are useful for sustenance during difficult periods of time. Singh and Singh (2009) reported that majority of the rural women are farmers and illiterates but have vast knowledge of traditional medicines. There was an extensive use of oral Traditional Knowledge in the various domains by the women like food production, population control, food preservation, childcare, culture transfer. Women are having their ancestral wisdom to cure many diseases. Range of indigenous fruits and tubers are utilized during drought and food scarcity to meet nutrition requirement for maintaining health.

Tamang and Chettri (2009) found that several ethnic communities of North East India have invented the traditional technologies of converting protein rich soybeans into flavored fermented food with easy digestibility and bio nutrients. This is exclusively carried out by the ethnic women in Sikkim, Manipur, Meghalaya, Nagaland, Mizoram and Arunachal Pradesh. Worth native knowledge of these women has been documented and 6 sticky fermented soya-bean found have been listed out.

India is a country of different traditional culture and tribes and follow different customs and systems of medicine. Ladakh medical practitioners popularly known as Amchis follow the Tibetan
system of medicine, use numerous herbs for various ailments in their prescriptions and still looking after more than 60% of population (Ballabh and Chaurasia, 2009).

It is generally established that over 6000 plants in India are used for traditional, folk and herbal medicines, representing about 75% of the medicinal needs of the third world countries (Dubey et. al., 2004).

Berkes (2001) in his article on religious traditions and Biodiversity revealed that religious traditions provide values, worldviews, or environmental ethics that shape the way in which different societies interact with biological diversity and nature in general. Thus religions can encode adaptive strategies for resource management and biodiversity use, and supply emotionally powerful beliefs to put these strategies into practice. The incorporation of traditional knowledge, practice and belief systems into biodiversity conservation efforts is more likely to succeed than the use of purely scientific arguments.

Karuppusamy et al (2000) studied the needs for diversity conservation of traditional medicinal plant resources of Dindigul district and emphasized the role of ethnic and rural communities in insitu conservation. They expressed concern on the lack of documentation of indigenous knowledge of rich diversity of useful medicinal plants of this region and to promote and implement the conservation strategies for sustainability of the natural ecosystem.

Raveendranathan (1994) emphasized upon the need to conserve and multiply the natural resources, which are used in different indigenous systems of medicines in India. The clinical efficiency of Ayurvedic treatment of certain diseases as compared to that of allopathy is worth mentioning.

Posey (1993) while describing indigenous knowledge in conservation and use of world forests, emphasized upon the new models generated by native people for sustained natural resources management. Their ancient indigenous traditions, developed through millennia of experience, observation and experiment, provide options for sustainable management of natural resources. Indigenous knowledge comprises an integrated system of beliefs and practices distinctive to a cultural group. Among native people, in addition to information shared generally, there is specialized knowledge held by a few, who have expertise in soils, plants, animals, crops, medicines and rituals.
The use of the historical information including the formal documented records and the non-formal indigenous knowledge can provide vital information on indigenous resource management system and the present day management methods. There is a need to develop sampling methods and protocol that allow reliable comparison between sites without a complete inventory being taken (WCMC, 1992).

2.2. Medicinal Plants diversity in India:

Chandra Sekar (2012) deals with comprehensive list of Invasive alien plants of Indian Himalayan Region with background information on family, habit and nativity. A total of 190 invasive alien species under 112 genera, belonging to 47 families have been recorded. Among these, the dicotyledons represent by 40 families, 95 genera and 170 species; mono-cotyledons represent by 7 families, 17 genera and 20 species. The analysis of invasive species reveals that 18 species have been introduced intentionally, while the remaining species established unintentionally through trade. In terms of nativity, amongst 13 geographic regions, the majority of invasive plants reported from American continent (73%). While in life form analysis, the herbs (148 species) are dominant, followed by shrubs (19 species), Grass (11 species), Trees (4 species), sedges and climber (3 species each). Most of the invasive species are annual habit (63%). Apart from these, 90 species (47%) are being used by locals for medicinal purposes. A better planning is needed for early detection to control and reporting of infestations of spread of new and naturalized weeds to be monitored.

Medicinal uses of Himalayan plants are known since ancient period, references of which are available in the Indian mythology. In Charaka Samhita and Sushruta Samhita there are references of Himalayan plants. People of remote areas till to the present time are entirely depending on the forest resource for maintaining their day to day needs including healthcare and medicine. They have developed their own health care system based on locally available plants. Some important locally developed healthcare systems are Nepali Jaributi, Lepcha and Tibetan (Sancheti, 2010).

Butola and Samant (2010) studied the diversity, distribution, habitat preference, nativity, endemism, status and indigenous uses of Saussurea sp. in the IHR. A total of 62 sp. were recorded from the IHR. Of them 37 species were native to the Himalayan region, 8 were endemic and 21 were near endemic to the IHR. 27 of the 28 species that were known to have indigenous uses also had medicinal value and are used for the treatment of various diseases/ailments.
FRLHT has been developing over the past 15 years a comprehensive database on Indian Medicinal Plants. It covers various subjects linked to natural resources used by Indian System of Medicine such as botanical and local names correlation, geo-distribution data, maps, propagation, trade information etc. This is a well referenced dynamic database stores 7,637 botanical names (6,198 medicinal plants species) with 101745 vernacular names from 12 languages across India. Nearly 798 plant images are also available in the database (Encyclopedia on Indian Medicinal Plants, 2009).

There is a growing concern throughout the world that the natural resources essential for human development and survival, are being depleted and destroyed at an alarming and ever increasing pace. Nature has been particularly generous in hers gift of sylvan treasures to the state of Sikkim. The description of 160 medicinal and aromatic plants and the names of 28 bamboo plants are given in their site (Medicinal Plants, NTFP and Bamboos of Sikkim, 2009).

Mother Herbs; an online database has established itself as one of India’s leading names in the field of Medicinal plants with the promise of quality products that stay ahead of time. Mother herb is an integrated conglomerate of farmers engaged in cultivation, doctorates in pharma and pupil with decades of experience in Medicinal Herbs. It is a wholesale supplier of medicinal herbs, cosmetic herbs, spice herbs and other Indian herbs and is committed to excellence in its operations through quality products confirming to international standards (Mother Herbs & Agro Products, 2009).

Medicinal plant resources of forest origin are extensively used in various systems of medicine like Ayurveda, Unani, Homeopathy, Allopathy, Ethnic, etc. India is one of the world’s 12 mega diversity centres with 47,000 plant species and is divided into 20 agro-eco zones (Ajaz-ul-islam and Masoodi, 2007). There are many medicinally valued plant resources, which provide various kinds of drugs and medicine for various ailments in our country. An appropriate dosage of ethno-pharmacognistic preparation from different parts of plant body such as root, rhizome, bulb, leaves, bark, wood, flower, fruit, seed etc. are prescribed as a remedy for different diseases and disorders.

Reddy et al (2005) highlights the medicinal uses of 36 medicinal plant species belonging to 21 families practiced by local tribes and villagers since ages of Kondapalli fort, Andhra Pradesh.
Encyclopedia of Indian Medicinal Plants (Khare, 2004) has the description of about 1500 Indian medicinal plants. A few plants, which are not of Indian origin but are used in Unani medicine, have also been incorporated. Each monograph carries the family of the plant, scientific names followed by authentic Ayurvedic, Unani, Siddha and common English nomenclature.

Central Himalayas support about 1,386 medicinal plant species, out of which 1,338 are used for human diseases and disorders and 364 plant species are used for veterinary diseases, disorders and practices by the people of Uttarakhand. (Pande et al, 2004). Only 48 medicinal plants specifically used for veterinary diseases and 316 medicinal plants used for human and veterinary diseases both.

Adhikari et al (2003), while describing the distribution, use pattern and prospects for conservation of Medicinal trees of Uttaranchal state enlisted 197 medicinal trees in accordance with their altitudinal distribution and parts used in therapeutics. The major parts used in various ailments are bark (118 species), leaves (78 species), fruits (65 species), root (2 species) and seed (30 species).

Samant and Pant (2003) deals with the diversity, distribution and traditional knowledge of sacred plants of the IHR. A total of 155 species belonging to 70 families and 125 genera have been recorded. Of these 59 species are trees, 30 species are shrubs and 66 species are herbs. Out of these 15 species found in the category of threatened species.

Singh and Parabia (2003), while revealing the status of medicinal plants consumption by the pharmaceutical industries in Gujarat state, created the baseline database for indigenous and imported as well as cultivated, trees, shrubs, climbers, herbs and different crops used in Ayurvedic medicines. Gujarat pharmaceutical companies consume all the 310 herbal raw materials obtained from 270 plant species. With 148 species reported from forests, the consumption of vital parts like root, bark, seed, gum and whole plant are most detrimental to the ecology in general and the vegetation in particular.

In his study on medicinal plant raw materials for Indian drug and pharmaceutical industry, Sarin (2003) has discussed the fast growing trends in phyto-pharmaceuticals, plant based medicines and over the counter products. The number of plant species, yielding raw materials used by the industry on regular basis and or/in substantially large quantities, is put at around 340. Among these 145 occur wild in forests, 54 grow as weeds, 70 as cash crops, 30 as medicinal plants and 40 are
imported from other countries. The tremendous population of herbal medicines has, therefore, put a
great pressure on raw material resources. Natural population of many medicinal plants has declined
to a great extent while a few are at the verge of extinction.

While assessing the status of medicinal herbs, Uniyal *et al* (2002a) revealed that out of the
17,500 flowering plant species found in India, over 1600 are used in traditional medicinal system in
India and abroad. They opined that over-exploitation to meet the demands of illegal trade in
medicinal plants has led to the extinction of more than 150 plant species in the wild. Their work also
brought to light that at least 90% of the plant species used in the herbal industry are extracted from
the wild, majority of which come from the sub-alpine and alpine zones of the Himalaya.

Uniyal *et al* (2002b) also studied current status and distribution of commercially exploited
medicinal and aromatic plants in upper Gori valley of Kumaon Himalaya and estimated population
status and biomass availability of 14 threatened medicinal and aromatic plant species extracted and
traded from the higher altitudes of Kumaon Himalaya.

Shukla *et al* (2001a), while carrying out ethno-botanical studies in Korba basin, district
Bilaspur, Madhya Pradesh, described that aboriginal tribes of Basin follow rich ethno-botanical and
folk practices. They mostly depend on natural resources for their existence, while deriving their
needs. They collect plant for their food and also they have developed their own tradition for health
care. They make use of 24 plants belonging to 23 genera and 15 families of angiosperms as food and
medicines. Shukla *et al* (2001b) in their ethno-botanical survey of certain wild edible plants of
district Bilaspur, focused on 51 wild plant species which provide food and vegetables to inhabiting
tribals.

More than 70% of raw material used by Ayurvedic industries involves destructive harvesting
of various parts or whole plants of which roots contribute 29.6%, leaves 5%, bark 13.5%, wood
2.8%, rhizome 4%, whole plant 16.3% (Tiwari, 1999).

In recent years, India has emerged as one of the biggest suppliers of medicinal raw materials
(Holley and Cherla, 1988). India ranked 2nd amongst 12 world leading exporter countries (Lange,
1997). 95% of the medicinal plants collected in India are gathered from the wild, which include trees
(33%), herbs (32%), shrubs (20%), climbers (12%) and other constitutes 3%. These collections are
mostly destructive (72%) which include the entire plant (16.3%), reproductive parts like flowers, fruits and seeds (22.1%) or tuber, root and stem (39.5%) (Shanker and Majumdar, 1995).

In India, the rich plant diversity of the Himalaya – over 8000 angiosperms, 44 gymnosperms, 600 pteridophytes, 1737 bryophytes, 1159 lichens, etc. – has been a source of medicine for millions of people in the country and elsewhere in the world (Singh and Hajara, 1996).

India is a veritable emporium of medicinal and aromatic plants. It has been estimated that of the 15,000 higher plants occurring in India, 9000 are commercially useful, of which 7,500 are medicinal, 3,900 are edible, 700 are culturally important, 525 are used for fibre, 400 are fodder, 300 for pesticide and insecticide, 300 for gum, resin and dye and 100 for incense and perfume (Anon, 1994).

In his studies on conservation of medicinal plant resources in Himalayas, Goel (1993) asserted that if the medicinal plant wealth of Himalayas is not protected and scientifically exploited, it might completely deplete, posing serious ecological and economical threats. It is the right time for the government to assess the gravity of situation on the basis of detailed survey and formulate future plan of action for its management.

Ramakrishnan (1992) revealed that tropical forests, an important natural resource, used traditionally on a sustainable basis by the local communities, are currently under serious threat due to over-exploitation.

Anon (1992) revealed the mountain region in India is spread over 13 states in the Indian Himalayan Region (IHR) covering a geographical area of 500,000 km². Over 51 million people (6% of the total population of India) live in the IHR.

Gauniyal et al (1991) working on major medicinal plants as foreign exchange earner, suggested coordinated efforts of concerned agencies for promoting cultivation of identified medicinal plants to ensure their regular supply and stabilization of raw material prices.

Sharma et al (1989) while working on Ethno-medicinal plant lore from Mukundara ranges, Thalawar district, Rajasthan enumerated 20 plants with their common name, scientific name, intraspecific variation, voucher specimen, preparation of medicine, plant part used, general and adjunct disorder treated, dosage given and symptoms of disorder and diagnosis of the disease. They
further revealed that knowledge of such medicinal plants is inherited by oral transmission through generations of the tribals. Various uses of plants in tribal life were recorded and diverse uses of plants for medicinal purposes were particularly noted.

2.3. Medicinal Plant diversity in Western Himalayas:

As per the study of Ganie and Tali (2013) about 650 plant species used as medicines in one or other form in Kashmir Himalaya. 11 different types of threat operative to medicinal plants in Kashmir Himalaya which include – overgrazing, grass cutting, landslides/soil erosion, constructional activities/unplanned development, floods/flash floods, over exploitation/over harvesting, cement factory dust, mining/stone quarrying, conversion of forests and grasslands into agricultural land/land use changes, alien species invasion, huge tourist influx. The extinction of these plant species lead to ecological imbalance and affect the backbone of traditional medicine system on which a huge population still depends.

Ishtiaq et al (2013) studied the ethno-botanical data and revealed that 12 Gymnosperm species are being employed in different ethno-medicines, food, fodder, shelter and other domestic purposes. The inhabitants of the area used the plants for multipurpose and have a long time been dependent on surrounding plant resources for life subsistence.

RanaMan and Samant (2011) recorded a total of 270 medicinal plants belonging to 84 families and 197 genera. Maximum medicinal plants were reported in the altitudinal zone 2000 - 2800m and decreased with increasing altitude. Out of the total, 162 medicinal plants were native and 98 were endemic to the Himalayan region. Maximum species were used for stomach problem, followed by skin, eyes, blood and liver problem. 37 species were identified as threatened.

Pant and Verma (2008) document the tree species of the Pir Panjal Biodiversity Park of BGSB University and its indigenous uses. A total of 28 species belonging to 24 genera and 19 families were observed being used traditionally. Out of these, only 6 species were natives and 22 were non-native of the IHR.

Rashid et al (2008) reported 57 plant species belonging to 33 families from the region. The four major reported life forms were shrubs, trees, herbs and climbers. Herbs make up the highest proportion of edible spices, followed by tree, shrubs and climbers. The information of ethno-
botanical exploration, identification, concerns, conservational aspects and future potentialities of the wild edible plant species consumed by the Gujjar tribe inhabiting the hilly areas of district Rajouri, apart of J&K state – India dealt in detail.

Khan (2007) has worked on structural and compositional analyses of phyto-diversity of Sewa river catchment area in NW Himalaya and described 183 medicinal plants along with their local names and their uses in the region. Malik (2007), while working on the ethnobotanical studies on the medicinal plants of Ramnagar (Udhampur) has described 80 medicinal plant species belonging to 73 genera of a tehsil of district Udhampur (J&K state).

Pal (2005) during the course of his study on an assessment of forest resources and human interaction with forest in Dharamshala Forest Division of H.P. found 10 important medicinal plants and explained the medical value and parts of plant used for the cure of various diseases.

Jhangir (2004) has given the description of 143 medicinal plants of the Kathua district of J&K state with the present status of threat and their medical uses.

Over 7,000 species of medicinal plants are used in Indian system of medicine – Ayurveda, Siddha and Unani; of which 95% of medicinal plants are being collected for drugs and pharmaceutical industries from wild population. He also highlights 179 species of commercial importance for drugs and phyto-pharmaceuticals and suggested that the herbal resources of the state should be scientifically documented, commercial cultivation initiated compiled with value addition for ushering in economic prosperity to the people of the hill state (Chauhan, 2003).

Kant and Sharma (2001) studied medicinal plants of Patnitop and its adjoining Hills and reported economically very important medicinal plants with special suggestion of their conservations.

Assessment of 360 medicinal plant species for Himachal Himalaya (Badola, 2001) offer an advantageous position, comparing earlier reports (Gupta, 1964, 1971; Singh and Aswal, 1992; Gaur and Singh, 1993; Chauhan, 1999) as the study provides a balanced ratio of woody and non-woody taxa, projecting diversified habitat environments.

Srivastava et. al. (2000) studied threatened plants of medicinal and aromatic value of north-west Himalayas and revealed that 20 taxa of medicinal and aromatic value distributed in the north-
Sources of Traditional Knowledge on Medicinal Plants in the Western Himalayan Region

The western Himalayan region extended from Jammu and Kashmir to Western borders of Nepal have entered the category of threatened plants due to large scale and indiscriminate collection in the past. They highlighted the threats involved in each individual case and suggested remedial measures.

Viswanathan (1999) discussed the edible and medicinal plants of Ladakh (J&K). The state of Jammu and Kashmir, widely known as heaven on earth and ‘biomass state of India’, supports 55 aromatic (Singh et al., 1993) and 291 medicinal (Kaul, 1997) plant species, respectively 93 plant species including 23 medicinal plants fall in one or other category of threats. Vidyarthi (1997) has given the description of about 3300 wild and cultivated plants of the Jammu, Kashmir and Ladakh region with the vernacular names of all the three regions. He also enumerated that many ethnic uses of plants are peculiar to the regions. Koul (1997) enlisted 111 selected species of medicinal plants from cold and arid Himalayas of Kashmir and Ladakh. Singh (1996) studied ethno-medico botany of Dards tribe of Gurez valley in Kashmir Himalayas. The exploration of medicinal plants of Jammu and Kashmir state date back to the arrival of an official of East India Company to Ladakh and collection of some medicinal plants in the earlier 19th century (Stewart, 1967) until now reports on collection and study of medicinal plants are very few in J&K state except some stray references.

Nautiyal et. al. (1994) conducted exploration of fodder grasses and legumes germ plasm of cold desert of India viz. Ladakh region in Jammu and Kashmir and Lahaul-Spiti in Himachal Pradesh.

A rough estimate and secondary sources suggest availability of about 1,000 to 1,200 medicinal plants species in Himachal Himalaya (Gupta, 1964, 1971; Uniyal and Chauhan, 1971; Chowdhury and Wadhwa, 1984; Singh and Aswal. 1992; Badola, 2001). As per habitat, these medicinal plants include 18% tree, 21% shrubs, 55% herbs in composition (Badola, 2001) which coincides more or less with that of Indian Himalayan region, having 23%, 22% and 58% species as trees, shrubs and herbs respectively (Samant et. al., 1998).

Collection of medicinal herbs as minor forest produce under forest law as traditional rights in designated forest land (Anderson, 1886) has been an important source of the native’s income in Himachal Himalaya (Dobriyal et. al. 1997; Tandon, 1997; Badola, 2002).
2.4. Traditional Health care systems:

Rana et al (2013) identify and document medicinal plants used by the faith herbal healers of Nanda Devi Biosphere Reserve along with their uses and preparation. They revealed uses of 90 plant species used for treating diabetes, arthritis, cardiac complaints, asthma, leucorrhoea, infertility, mental disorders, flatulence, abdominal complaints and chronic fever, etc.

Mathur and Joshi (2012) reported 41 angiosperm plant species used for traditional remedies. Details of plant parts, method of preparation and mode of utilization also discussed. The use of these plant species is for 45 traditional remedies for a long time on trial and error basis.

Rana et al (2012) document folklore medicines used by the tribal communities inhabiting in buffer zone of Nanda Devi Biosphere Reserve, Uttarakhand. These communities utilize plants and plant product as aphrodisiac medicine. They recorded 17 significant medicinal plants used by local community for the treatment of sexual incapability.

Panda and Mishra (2012) studied the three ethnic groups (Lepcha, Bhutia and Nepalis) of Sikkim practicing traditional medicine have a strong belief of different supernatural forces and deities. The treatment, principles, beliefs and medical ailment are more or less similar in three ethnic groups. The study shows a declined trend of new generation to adopt these practices as profession.

Nath et al (2011) provides the information of traditional herbal recipes using 28 plant species belonging to 26 genera and 22 families in treating various joint diseases by different ethnic groups of Assam. Occurrence of various joint diseases among rural people is a common problem and they have deep belief and rely and approach for traditional remedies.

Tripathi et al (2011) clinically undertook the study of Bala Taila (sesame oil processed with Sida cordifolia and some other indigenous compound) Pariseka (instillation) in wound healing on 30 patients. It was found that there is reduction of pain, swelling, changes to normal colour, reduction in discharge, appearance of granulation and size of wound reduced to.

Kulkarni and Deshpande (2011) reported that Sahyadris of Maharashtra have a diverse flora and fauna and harbor numerous species of medicinal importance. Katkaris are one of the primitive tribes of India, has remote locality, poverty and lack of touch with modern civilization make them confined to the hilly areas around. They documented the traditional remedies of Katkaris from
Maharashtra with respect to 35 diseases and their cure by using the combination products of 33 plants and 7 animals. They also highlight the various customs related to the ethno-medicinal applications.

Suneetha et al (2011) studied that the natives of Eastern Ghats use different parts of plants in crude form to treat bone fractures. 42 plant species of angiosperm belonging to 33 families are reported during the floristic survey. For each plant species, details on the scientific names, family, local names and uses are provided along with parts harvested for treatment, the manner of processing and the mode of administration.

Binu (2011) documented 10 medicinal plants used for treating body pain by the 6 tribal communities inhabiting the study area. It is found that they have a very good knowledge of medicinal plants in their surrounding forest.

Negi et al (2011) studied the practice of traditional medicine was carried out among the people of Rawain valley, Uttarkashi. They documented 63 plants and assessed their therapeutic significance in managing various diseases in the villages of the valley. Fresh leaves, roots, fruits, bark, stems and sometime whole plant are reported to be used for treatment of various ailments. They found that max. 11 medicinal plants were used to cure fever, 8 for cuts and skin diseases, 7 for cough, 6 for boils, wounds and rheumatism, 5 for stomach disorders, jaundice, arthritis and menstruation, 2 for vomiting, toothache, burns, muscular pain, bleeding and cancer.

Beegam and Nayar (2011) provides the information of 66 preparation made out of 58 plant species specifically employed in prenatal (14), postnatal (23) and child healthcare (29) in folk medicine of Kerala. The details about preparation and administration of medicine, plant parts used, local names, dosages and status of occurrence of species – wild, cultivated, naturalized or marketed, are provided. An analysis of these, 58 plant species shows that 37 species (63%) are native and the rest 21 species (36%) are naturalized exotics. Of the 36 native species, 14 species occur wild and the rest 23 species are either cultivated or planted.

Malik et al (2011) recorded the traditional healthcare remedies currently practiced by the local population in the far flung areas of the Kashmir Himalaya. They recorded the information of 30 plant species distributed along wide altitudinal range between 1,300-4,500m. These plant species through different modes of preparation are used to heal external burns, abrasions and wounds, orally
taken to cure digestive, respiration, skin and muscular disorders and also used as diuretic, antipyretics, analgesic, anti inflammatory, antiseptic and febrifuge etc.

Jain et al (2011) surveyed the ethno medicinal plants which are especially used for the treatment of snakebite in the tribal (Bhil, Meena, Garasia, Sahariya, Damor, Kathodia) dominated areas of Rajasthan. They found that people belonging to primitive or aboriginal culture possess a good deal of information about medicinal utility of plant diversity. 44 plant species were used to treat snakebite victims. They also discussed several myths related to snakes prevalent among the tribal and rural people.

Kumar and Hamal (2011) studied the traditional remedies used against arthritis by indigenous populace in Kishtwar High Altitude National Park. They observed that the local populace use 13 different herbal treatments involving 14 plants/plant parts for arthritis but the choice and frequency of use for herbs is influenced by many factors such as season of the year, accessibility and knowledge of other species.

The same plant may predominantly be used for treatment of different diseases even in different parts of India. “Gymnema sylvestre is stomachic, stimulant, laxative and diuretic. It is also used for the cure of diabetes. The single herb is used by traditional healers of diverse parts of India for various ailments. The leaf is given in gastric troubles in Rajasthan. Traditional healers of Maharashtra prescribe it in urinary problems and stomach-ache where as in Madhya Pradesh, tribals and local healers apply the leaf extract in cornea opacity and other eye diseases. In Andhra Pradesh it is used in glycosuria (Acharya et al, 2010).”

Shukla and Chakravarty (2010) document the traditional knowledge of medicinal plants that are in use by the Raj-Gond tribes residing in Korba district of Chhattisgarh. They identify the involvement of spirit, demons or deities. The study documented the information on various herbs including the derivatives or parts of the herbs they use, preparation of drug for use, dosage etc.

Uprety et al (2010) document a total of 60 medicinal formulations from 56 plant species. Medicinal plants were used to treat various diseases and disorders, with the highest number of species being used for gastro-intestinal problems, followed by fever and headache. Herbs were the primary source of medicinal plants (57% of the species), followed by trees (23%).
Babchi seed is a reputed drug in Ayurveda and Unani systems of medicine for treatment of several types of skin disorder; it is considered anthelmintic, diuretic and stomachin and used in anaemia, anasarca, baldness, leucoderma, skin disease, respiratory disorders and vomiting (Sinha and Rai, 2010).

Barman (2010) reveals the prevailing folk concept of disease and treatment methods existing among the Rajbanshi community till today. The community believes that various social phenomena are responsible for their disease causation. Their diagnosis methods still rely on majico religious practices and sometimes some herbal medicines are offered by the healers and they rarely visit medical college for treatment.

The foundation for revitalization of local health traditions is also doing an excellent job in creation of databases that can provide systematic evaluated information on indigenous health care systems. Their vision is to revitalize Indian medical heritage (Foundations for revitalization…., 2009).

Stomach disorders are usually found among men of Ladakh, which is mainly due to harsh climate conditions, high altitude regions, low oxygen pressure and water related problems. Local herbal practitioners (Amchis) are successfully looking after these problems and curing them. Fifty seven medicinal plant species belonging to 24 families commonly used against stomach related problems by Amchis have been found in Ladakh region (Ballabh and Chaurasia, 2009).

Ajaz-ul-islam and Masoodi (2007) has enumerated the information of 83 ethno medicinally important plant species belonging to 77 genera and 41 families and being utilized for 57 common diseases by the tribal people of Ranchi district in Jharkhand. Several of the plant species are likely to go under the category of threatened plant species due to over exploitation and habitat destruction if appropriate scientific conservation measures are not adopted immediately.

Dey et al (2007) observed that 47 medicinal plants are used to cure 11 different common ailments namely cold, cough and asthmatic problems, rheumatism, skin diseases, indigestion and dysentery, jaundice, dental problem, weakness and body pain, cuts and wounds, piles, worms, vitality and weakness.
Traditionally, the rural women prefer plant medicines rather than modern medicines for abortion, menstrual trouble, conception disorders, sterility, delivery problems, etc. Some ethnomedicinal observations made from the rural areas of Haryana, revealed valuable phyto-therapeutic information on the various gynecological disorders. Uses of 17 plant species for menstrual disorders, 15 species for leucorrhoea, 6 species for delivery problems, 5 species for gonorrhea, 4 species for lactation troubles, 3 species for abortion and 2 species for miscarriage have been enumerated (Yadav et al, 2006).

Prashant Kumar and Vidyasagar (2006) observed that local people practice traditional system of medicine in their healthcare system. About 30 plant species, belonging to 29 genera and 20 families largely used as medicine by tribals and local people of Bidar have been enumerated. These plants contain valuable chemical substances and are employed in the treatment of various ailments.

Pawar and Patil (2006) enumerated 26 species of angiosperms belonging to 20 families employed against rheumatic disorders by aboriginal and rural folks of Jalgaon district. Eight plants species are new reports to treat rheumatism and three other plant species are described in other parts of India but different plants parts are used.

Sharma et al (2006) while working on the ethno-medicinal observations of cold desert area of Himachal Pradesh has enumerated first hand information of 26 plant species and stated that large number of medicinal plants are traditionally used for diseases like malaria, cancer, gastrointestinal disorders. The average land population ratio in the area is probably thinnest in the world. The Spitians have been largely dependent on the plant resources for food, fuel, timber, household articles and medicines to a great extent for ages.

Uniyal et al (2006) studied the diversity of plant resources that are used by local people for curing various ailments. It was found that 35 plant species are commonly used by local people for curing various diseases. In most of the cases 45% underground part of the plant was used. ‘Sik’ a traditional recipe served as a nutritious diet to pregnant women is also documented.

Kanwar et al (2006) studied the application of plants at home scale level in treating various kinds of ailments. They identified 31 plant species used by the villagers for the treatment of various diseases at home scale level. 20 plant species were used for curing more than one disease. 3 plants
used against more than five diseases. It was found that elder people had more inclination towards herbal medicine followed by middle and young people.

Pandey and Verma (2005) explains the healing power of wreaths made from 16 plants/their product may be attributed either due to some easily diffusible chemicals which get entry through general body surface or may release some volatile compounds which get entry through respiratory system and produce remedial effects against various body ailments.

Rai and Nath (2005) found that several plants are used in case of one disease according to their availability in the region. Some of the plants commonly used by tribals in Central India for prominent diseases like fever, headache, toothache, earache, body-ache, liver disorders, asthma, cold, cough, bronchitis, bone-fracture, snakebite, scorpion sting, skin infections, problem of tribal women etc. have been recorded.

“Several herbal drugs developed by the CSIR are already in the market – Saheli (Family planning pill), Asmon (for asthma) and herbal agents for leukemia. The Institute of Microbial Technology, Chandigarh has come out with streptokinase using cow urine, which is blood clot dissolver and thereby plays an important role in heart and brain disorders” (Gautam, 2005).

Upadhaya et al (2005) studied that 45 plants out of the total 435 plant species recorded in the two sacred groves (Ialong and Raliang) are used as medicine. Several common ailments are treated by herbal medicines like 11 species used in general body aches and colic, 12 species in dermatological problems, 18 species in gastrointestinal disorders, 8 species for the treatment of bone fracture/dislocation and muscular problems, 3 species in eye diseases, 2 in respiratory disorders, 4 in blood related problems and 2 as antivenom.

Singh (2004) studied and enumerated 73 plants of traditional medicinal values out of which 32 were used to cure stomach related problems, 13 for boils, 10 as pain killers, 5 each for removal of gum problem, fever and diuretic problems while one was used to cure cancer. The study centered on indigenous knowledge, marketing channels, conservation practices, impact of market forces and policies of Forest Department pertaining to medicinal plants at Chhakinal watershed in Himachal Himalaya.
Khan et al (2004) has recorded the ethnomedicinal value of 27 plant species belonging to 20 families from the Uri, Kashmir Himalaya. He also discussed that a multiple of home remedies are employed for the treatment of common ailments such as fever, headache, dysentery, constipation and minor injuries. Mostly the drugs are prepared in the form of paste, powder, poultice, latex, decoction, extracts, smoke and even as herbal tea. Both fresh and dried parts of plants are used for making drugs in crude form.

The treatment procedures in traditional system of health include the use of herbal medicines, mind/body approaches such as meditation, physical therapies including massage, acupuncture and exercises which includes physical as well as spiritual well-being (Patil and Yadav, 2003).

Dhar et al (2002) while working on current status and future strategy for development of medicinal plants sector in Uttaranchal revealed that ethnic communities in the state of Uttaranchal rely on native plant species for sustenance of their traditional health care system. The excessive extraction of medicinal plant resources for use in the pharmaceutical industry has resulted in ruthless destruction of natural populations of medicinal plants.

Jha (2001) in an ethno-botanical study on Chotanagpur, brought forward the use of 19 medicinal plant species by local inhabitants for the treatment of ‘asthma’. Mitaliya et al (2001) enumerated 21 plant species having medicinal value from bark. Each species has got a typical stem bark and is used in medicine, by tribal and rural folk in Gujarat, due to the presence of certain pyto-chemicals. Ray (2001) studied the availability and use of some medicinal plants of Birbhum district of West Bengal. More than 100 species of medicinal value are distributed in different regions of the district, which are most commonly used for traditional health care.

Mareethi et al (2000), while working on traditional medicinal plants of Devanagere district, Karnataka, identified 30 angiosperm species used to cure various cutaneous diseases like leprosy, eczema, scabies, gonorrhea, ringworm, boils, sore eyes and wounds.

Singh (1990) gave the detailed information regarding scientific, vernacular names, distribution pattern, official parts and uses of 55 medicinal plants used in traditional medicinal systems and collected on commercial scale in Kinnaur region.
References:


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