



## Medicinal flora and Ethno-botanical knowledge of Baramulla Tehsil in Jammu and Kashmir, India

Nasir Aziz Wagay

P G Department of Botany, Vidya Bharati Mahavidyalya, Camp, Amravati, Maharashtra, India

[Received 13/07/2014, Accepted-01/09/2014]

### ABSTRACT:

Throughout the globe, the medicinal properties of plants have made an outstanding contribution in the origin and evolution of many traditional herbal therapies. Keeping this in view, a survey was conducted in Baramulla tehsil of district Baramulla during all the seasons of 2012- 2013. Baramulla tehsil is rich in the biodiversity of flowering plants among which most of the plants are used as medicine by the tribal and rural people of the area. In the present work 51 plant species, belonging to 30 families which are used as folk medicines have been examined. Among 51 plant species 7 were trees, 5 shrubs, 37 herbs, 1 climber, and 1 parasite. Lamiaceae and Asteraceae were the most represented families with 6 and 4 genus containing 7 species each. The study revealed that, aerial parts were mostly used, followed by the usage of underground parts and whole plants respectively. The purpose of the present study was to record medicinal plants and methods of their usage. The botanical name, family, traditional names, parts used, etc are discussed here for awareness of various uses of these medicinal plants.

**Key words:** Herbal therapy, Folk medicine, Medicinal plants

### INTRODUCTION

Plants have been the vital component of human civilization from the time man learned to survive on this planet. Man has used plants to fulfill all the primary requirements for his sustenance from prehistoric times. Not only this plants enact as produce in the ecosystem functioning.

Human existence (and that of most other organisms) is heavily dependent on what biologists call primary producers, mainly plants. About five thousand plant species have been used as food by humans, but less than twenty now feed the majority of the world's population and just three or four carbohydrate crops are staple food for a vast majority.

Besides sustenance, the plants have been used as therapeutic aid for alleviating various human ailments from very earlier times (Sullivan & Shealy, 1997). Such plants, commonly referred to as medicinal

plants, have been one of the valuable tools in the traditional system of medicine and also provide active ingredients to formulate new medicines by the pharmaceutical industry. In fact, the WHO has listed over 21,000 plant species to be of medicinal use around the world. More than 60% of the world's human population relies on plant medicine for primary health-care needs.

In recent times, serious threats of bio-piracy and intellectual property rights (IPR's), with huge economy at stake, have necessitated the early bio-prospecting of the potential medicinal plants used in the folklore. In this process, the first and foremost step would be the documentation of the ethno-medicinal uses of plants, as attempted in the present study, throughout the country. Simultaneously, this indigenous knowledge could be translated into

commercial products on industrial scale, with benefit-sharing to all stake-holders. Such a strategy would ensure that our bio-resources are not pirated.

These may prove to be extremely valuable genetic stock in the future because, unlike current commercial varieties, many of these wild plants have genes that help them resist leaf rust diseases. The nutritional value of 'bush' foods is quite high, some having greater amounts of protein, fats, carbohydrates, minerals and vitamins than cultivated plant foods. Taking these perspectives in consideration, the exploratory study for the hunt of plants with economic potential was carried out in the Baramulla tehsil of north Kashmir in Kashmir Himalayas.

Situated at	34°11'53" N and 74°21'50" E 1850 m (6069 ft.) MSL
Area	4,588 sq km
Forests	2963 sq. kms (71% area)
Climate	Mediterranean type with four distinct seasons
Rainfall	1270 mm
Temperature	-0.030°C (January) to 32.10 °C (July)
PH of soil	minimum 7.05 and maximum 7.58

Majority of the population in the said tehsil reside in the hilly terrains. Area being hilly in character, inhabitants is mostly deprived from the basic health care and packed foods; hence relying mostly on the plants and plant derived products for their daily basic needs; including their daily health care. Most of the human ailments and veterinary disease are taken care by local Hakeems and elderly people with the help of herbal products.

As the rate of disappearance of these medicinal plant and plants of other economic potential and also the information associated with these plants lying with these old wise people is increasing at an alarming pace, it becomes obligatory to know what we have before we lose it without being noticed. The area is continuously being reshaped by many construction projects and new construction of houses, and new roads resulting in the shrinking of the habitats of many a species rendering them at the verge of extinction. Keeping in view the importance of biodiversity conservation and for the formulation of effective conservation strategies it is important to document the existing information of the plants of a floristic region. And this can be achieved in a phase wise exploration of the selected areas, in order to get a true picture of the

plant wealth of the Kashmir Himalayas, which was once a treasure grove of the medicinal plants. In this backdrop the present study was undertaken to explore the economic potential of the plants inhabiting the Baramulla tehsil.

### AREA OF STUDY

Map of District Baramulla



### METHODOLOGY

The specimens were identified by using the available literature (Stewart, 1972; Fassicles, Fl. Ind., 1996; Polunin and Stainton, 1997). The identified voucher specimens have been deposited in the laboratory of P.G. Department of Botany, Vidya Bharati Mahavidyalya, Amravati. (M.S.). The plant species are arranged according to Bentham & Hookers classification and their botanical name, local name, family, habit, flowering phenology, altitudinal range, part used and methodology of using these parts (wherever necessary) is also mentioned. The information about local name, part used and uses was collected from local people during the survey.

### OBSERVATIONS

The habitations are quite apart, many households even dotted far up along mountain slopes. Through long tradition, the local inhabitants have learnt to utilize plants for treating various ailments. Thus, a large proportion of plants growing in this area are used for medicinal purposes.

A list of common medicinal plant species in the catchment area, along with their medicinal importance, is provided below. A total of 51 species of medicinal plants are documented which are used for treating various ailments.

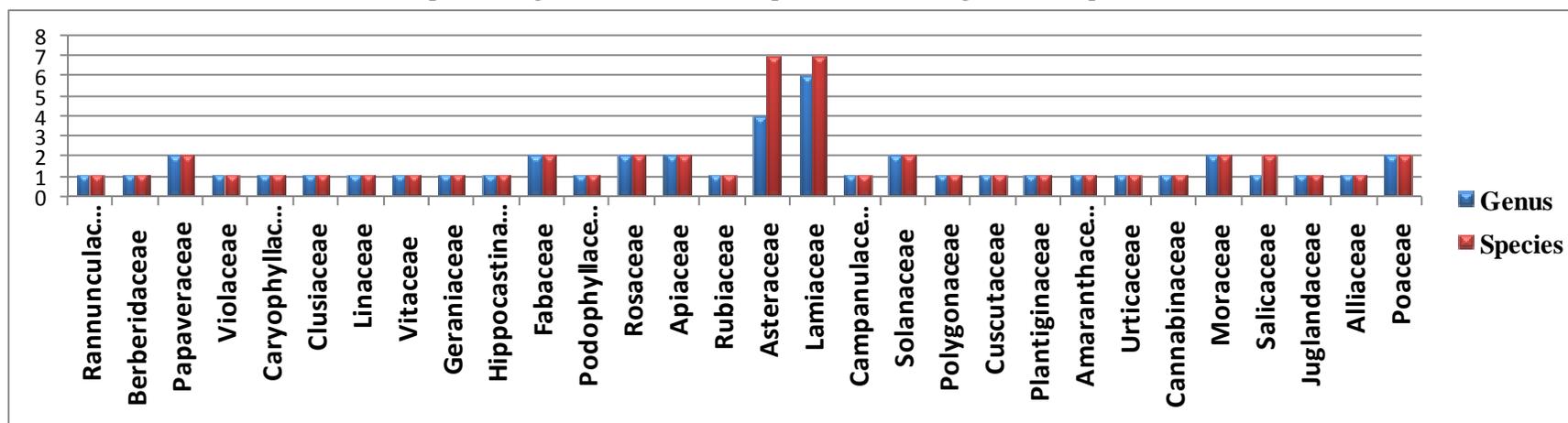
## Medicinal flora and Ethno-botanical knowledge of Baramulla Tehsil in Jammu and Kashmir, India

S. no.	Botanical name/ Family	Common name	Habit	Flowering phenology	Altitudinal range	Part(s) used	Ethnomedicinal significance / Methodology of using these parts
1	<i>Aconitum heterophyllum</i> Wall. Ex Royle / Ranunculaceae	Patris/ Paewakh	Herb	July- Sep.	1600-2800	Rhizome, Roots	Rhizome powder is mixed with mustard oil to treat headache and cough. Roots are used for curing gastro- abdominal disorders and tooth ache.
2	<i>Berberis lyceum</i> Royle / Berberidaceae	Kawdach	Herb	April- July	1800-2100	Fruits, Roots, & Bark	Paste of fresh fruits is used to heal wounds as they are coagulant, astringent. These can also be used for cholera. Roots are boiled to make a semi solid mass (Rasvat) which is used for to relieve indigestion, constipation and irregular bowel movement and also applied externally in case of eye diseases.
3	<i>Eschscholzia californica</i> L. / Papaveraceae	N.A.	Herb	Apr- Aug	Round about 2000	Capsules	It is used treat lice, to induce sleep in children, as a poison, for consumption, for toothaches, and as an emetic.
4	<i>Papaver rhoeas</i> Linn. / Papaveraceae	Khash khaash.	Herb	April-July	Round about 2800	Capsule	The milk from the capsules is used as narcotic with a slightly sedative property and contains morphine in exceedingly minute proportion.
5	<i>Viola odorata</i> Linn. / Violaceae	Bunufsha	Herb	May - July	1800-2600	Whole plant	Crushed plant mostly flowers is mixed with sugar to form a paste (Khambir) which is used for curing respiratory infections (like cough, hoarseness of voice, sore throat), fever and headache. It is also applied over the affected part of skin.
6	<i>Lychnis coronaria</i> (L.) Dest/ Caryophyllaceae	Shosh gass	Herb	July-September	2200-3900	Roots , Flowers	Extract of roots and flowers is used to cure lung and liver diseases.
7	<i>Hypericum perforatum</i> Linn. / Clusiaceae	Chai kul/ Therma	Herb	June-September	1500-1900	Whole plant	Dried powder of plant is taken with water to treat rheumatism.
8	<i>Linum usitatissimum</i> Linn./ Linaceae	Alshi	Herb	Feb-May	1900-2100	Seed	Seed oil has medicinal properties and seed cakes are used for feeding cattles.
9	<i>Vitis vinifera</i> L./ Vitaceae	Daech	Climber	April- May	1700-2100	Leaves and Fruits	Fresh leaves used to cure skin rashes, eruptions and sores. Fruit juice is given in case of fever.
10	<i>Geranium pratense</i> L./ Geraniaceae	Rattan joug	Herb	June- September	1500-1800	Leaves	Used to cure diarrhea.
11	<i>Aesculus indica</i> Colebr. ex Wall./ Hippocastinaceae	Handoon	Tree	April-Nov	1800-3500	Fruit	The bark is astringent and used as a tonic and febrifuge. The fruit is officinal and applied in rheumatic pains. The seeds can be eaten and are also cathartic.
12	<i>Medicago sativa</i> Linn. / Fabaceae	Poshi gassi	Herb	May-September	2750-4100	Leaves	Leaves are used to treat disorders of kidney & digestive tract, and paste of leaves is used for arthritis.
13	<i>Trifolium pratense</i> Linn./ Fabaceae	Tri patr / Batakunur	Herb	July-August	1600-5400	Flowers & leaves	It is used to restore the irregular menses and to promote conception. It is also used for bronchitis, burns and sedation.
14	<i>Indigofera heterantha</i> Linn. / Fabaceae	Zand	Shrub	May-July	1700-4000	Stems & Rhizome	Brush is made from nearly one year old branches, which is used for toothache. Powdered Rhizome Bark with water is taken to relieve abdominal pain.
15	<i>Podophyllum hexandrum</i> Royle / Podophyllaceae	Wan – wangun	Herb	May –June	3000-4000	Roots, Leaves, & Fruits	Crushed leaves and roots are applied on skin diseases and fruit is used in gastric problems.
16	<i>Prunus persica</i> Linn./ Rosaceae	Cheneaum	Tree	April -May	1500-2000	Leaves	Decoction of leaves used to get relief from abdominal pains.
17	<i>Rosa damascena</i> Mill./ Rosaceae	Jangli gulab	Shrub	May –June	1500-3600	Flowers	Extract from crushed flowers is used for skin diseases. This Extract is mixed with sugar which is also used in case of cough and cold.
18	<i>Daucus carota</i> Linn. / Apiaceae	Gazr	Herb	June -August	2400-2700	Seeds	Crushed seeds are used as contraceptive.

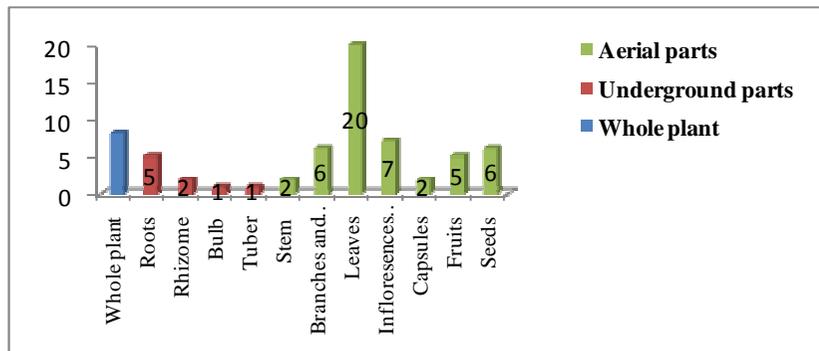
19	<i>Foeniculum vulgare</i> Mill. / Apiaceae	Badiyan	Herb	June- July	1800-2800	Seeds	Steam from seeds boiled in water is inhaled to cure stomach disorders. Seed powder is used to with water to get relief from cough, toothache and kidney disorders.
20	<i>Galium aparine</i> L./ Rubiaceae	N.A	Herb	March-July	1200-1600	Aerial parts	Extract is used as diuretic and antiscorbutic.
21	<i>Achillea millefolium</i> L. / Asteraceae	Phelgaus / Berguer	Shrub	June-September	1600-2800	Leaves , Flowers	Extract used for Inflamed gums, Toothache and mixed with flour to heal the bruises of snake bite. Decoction of leaves used for fever, headache and urinary disorders.
22	<i>Artemisia absinthium</i> L./ Asteraceae	Tethwan/ Damer	Herb	June-September	1700-2200	Leaves , Inflorescence	Juice of fresh leaves is used treat stomach pain and worm infections of intestine. Powder of dried Leaves and inflorescences are taken with milk to cure gastrointestinal diseases.
23	<i>Artemesia maritima</i> L / Asteraceae	Safaed chaw	Shrub	June-August	1700-2200	Leaves	Leaf extract is used against intermittent and remittent fevers, it is also used in skin eruptions.
24	<i>Artemisia vulgaris</i> L./ Asteraceae	Nagdowna/ Tatwan	Shrub	August- November	1700-2200	Leaves , Inflorescence	Dried leaves and inflorescences are used as pest repellent, against roundworms and interminent fevers.
25	<i>Artemisia scoparea</i> Waldst. and Kit./ Asteraceae	Pari chaw	Herb	July-November	1700-2200	Whole plant	It yields scoparone, which is highly effective as hypotensive and tranquillizing agent. Extract is also used as vermifuge.
26	<i>Taraxacum officinale</i> F. H. Wiggers / Asteraceae	Hand	Herb	May- July	1600-2400	Leaves	Past of boiled leaves is mixed with turmeric and salt to treat bone fractures. Cooked dry leaves and roots are served after child birth to ladies to prevent blood loss and strengthen their bones.
27	<i>Tragopogon porrifolius</i> L. / Asteraceae	Doad kund	Herb	May-August	1850-2000	Whole plant	It is used to have beneficial effects on gall bladder and liver. Roots are used as diuretic.
28	<i>Calamintha umbrosa</i> (M. Bieb.) Fisch. & Meyer / Lamiaceae	N.A	Herb	May-July	1500-2100	Stem and branches	It is used as condiment and used in aiding the birthing woman (also for uterus problems) for providing substantial relief.
29	<i>Thymus linearis</i> Benth. / Lamiaceae	Jangli javind	Herb	June- August	1500-3500	Whole plant	Powder of dried plant is boiled with milk and administered orally to treat cough and fever.
30	<i>Mentha longifolia</i> Host. / Lamiaceae	Chala pudna	Herb	May-Nov.	1600-2300	Aerial parts	Aerial powder is used to cure cough, sore throat, indigestion and constipation.
31	<i>Mentha arvensis</i> Linn./ Lamiaceae	Pudna	Herb	June – August	1700-2500	Leaves	Extract of leaves is used to cure gastroenteritis and fever when taken with tea. It is also used to cure respiratory infections when taken with curd.
32	<i>Salvia moorcroftiana</i> Wall. / Lamiaceae	Buder tuned	Herb	April-June	1800-6000	Leaves	Extract of boiled leaves used as mouth freshener, reduces inflammation & swelling of mouth and throat.
33	<i>Prunella vulgaris</i> L./ Lamiaceae	Kulwauth	Herb	June –July	1600-1900	Flowering Tops	Hot water bath of flowering tops are used to cure headache, fever, and body muscular pain.
34	<i>Nepata cateria</i> Linn. / Lamiaceae	Gand soi	Herb	May- Sep.	1600-2400	Leaves	Grinded fresh leaves used in cases of vomiting.
35	<i>Codonopsis ovata</i> Benth./ Campanulaceae	Bidli	Herb	July- August	3000-4200	Aerial parts	Used in the form of poultices for the treatment of ulcers and wounds.
36	<i>Datura stramonium</i> L. / Solanaceae	Datur	Herb	June-July	Around 2400	Seeds, leaves, petals	Seed powder is used to treat cough. These are also used for hallucination. Decoction of leaves and petals is used to cure cutaneous eruptions, as antiseptic on wounds.
37	<i>Solanum tuberosum</i> L. / Solanaceae	Alua	Herb	March- April	1600-2500	Tuber	Ripened tuber paste used for burns of body parts.
38	<i>Rumex nepalensis</i> Spreng./ Polygonaceae	Abuj	Herb	August- September	2200-2650	Roots	Root extract is used to cure cough and constipation when taken with milk, tea, or water. It is also used to cure skin diseases.
39	<i>Cuscuta reflexa</i> Roxb. / Cuscutaceae	Kokliport	Stem parasite	January – March	1800-2100	Whole plant	The decoction of seeds in high doses causes abortion. Decoction of stem (30ml) is taken orally to cure jaundice, stomach, and urinary disorders. Small pieces of stem are taken along with water to cure falling of hair and

							swelling of testicles.
40	<i>Plantago lanceolata</i> Linn / Plantaginaceae	Gul	Herb	June- September	1500-1900	Leaves	Extract from boiled leaves is used for urinary disorders and cough. It is also used as cooling drink.
41	<i>Celosia argentia</i> Linn. / Amaranthaceae	Mawl	Herb	May- July	1200-1800	Seeds	Seeds are used as demulcent.
42	<i>Urtica dioica</i> Linn./ Urticaceae	Soi	Herb	May-Sep.	1600-2400	Whole plant	Whole herb is crushed and extract used to cure rheumatoid pains and fever. Root extract mixed with oil is used treat cysts of feet and hands. It is also used to heal minor wounds.
43	<i>Cannabis sativa</i> L./ Cannabinaceae	Bang	Herb	August-September	1500-3700	Leaves	Powder of Leaves is mixed egg yolk which is used to regulate the menstrual cycle in women, checks the night urination in children. Dried leaves are also used as narcotic.
44	<i>Morus nigra</i> L. / Moraceae	Tul	Tree	March-July	800-2200	Fruits and leaves	Fruit refringent, laxative and cooling and leaf paste used to heal wounds.
45	<i>Ficus carica</i> Linn / Moraceae	Anjeer	Tree	September-November	390-1500	Fruits	Extract of fruits when boiled with water is used to treat cough and throat problems.
46	<i>Salix alba</i> L./ Salicaceae	Veer	Tree	April-May	1700-2900	Leaves and branches	Extract from is used for rheumatism and also for dissolving blood clots in veins and arteries in heart patients because it contains salicylic acid (aspirin).
47	<i>Salix wallichiana</i> Andrs./ Salicaceae	Danthi-veer	Tree	April-June	1900-2400	Leaves	Decoction of leaves is used to cure fever and general body pain.
48	<i>Juglans regia</i> L./ Juglandaceae	Doon	Tree	February-April	1700-2900	Bark & Leaves	Bark is used for cleaning teeth. Leaves yield ash color dye and Decoction of leaves is used for intestinal worms.
49	<i>Allium sativum</i> L./ Alliaceae	Rohun	Herb	April-May	1600-2200	Bulbs	Bulbs are ground and then mixed with mustard oil, and the mixture is used to cure baldness and dandruff.
50	<i>Triticum aestivum</i> L./ Poaceae	Kaenak	Herb	March-April	1600-1900	Seed	Seed decoction is given to children for treatment of worms.
51	<i>Cynodon dactylon</i> L. / Poaceae	Dramn	Herb	May – Nov.	1500-4500	Whole plant	Decoction of whole plant used to cure common cold and it is anti-inflammatory.

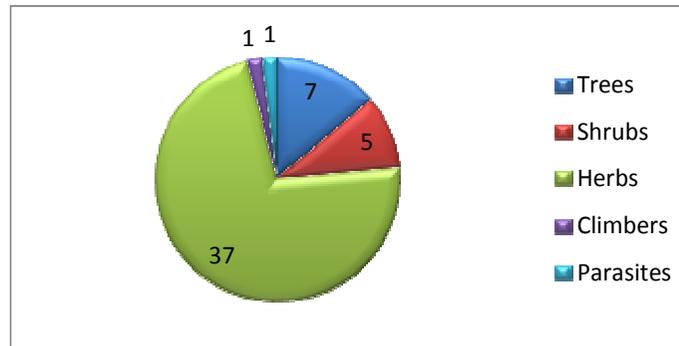
Graph showing families with their respective number of genera and species



**Graph** showing different plant parts being used



**Graph** showing no. of trees, shrubs, herbs, climbers & parasites studied



**Photos of different plants during surveys and collection**



*Lychnis coronaria*



*Medicago sativa*



*Artemisia maritima*



*Indigofera heterantha*



*Tragopogon porrifolius*



*Urtica dioca*



*Salvia moorcroftiana*



*Juglans regia*



*Thymus linearis*



*Taraxum officinale*



*Galium aparine*



*Geranium pratense*

Author during collection, examining, interacting with older people of the area



**REFERENCES:**

1. Anonymous, Gazetteer of Kashmir and Ladakh, New Delhi (1974) 10-12.
2. Ara S & Naqshi A R, Ethnobotanical studies in Gurais Valley, J Econ Tax Bot 17 (3) (1992) 657-678.
3. Ara S & Naqshi, A R, Ethnobotanical studies in Gurais Valley, J Econ Tax Bot 10 (1992) 185-191.
4. Dar G H, Bhagat R C, & Khan M A, Biodiversity of Kashmir Himalaya, (Valley Book House, Srinagar, Kashmir), (2001) 120.
5. Fascicles, Flora of India, (Botanical Survey of India, Calcutta, India), (1996 onwards).
6. Fascicles, Flora of West Pakistan / Pakistan. (edited by Nasir E & Ali S I / Ali S.I. & Nasir Y / Ali S I & Qaiser M), (Fakhri Press Karachi / Rawalpindi, Pakistan), (1970 onwards).
7. Husain M, Geography of Jammu and Kashmir, (Rajesh Publications, New Delhi), (2001) 15-16.
8. Kachroo P & Nahvi I M, Ethnobotany of Kashmiris, In: Forest Flora of Srinagar and its Neighbourhood, edited by Singh G & Kachroo P, (Bishen Singh and Mahendra Pal Singh, Dehra Dun, India) (1987) 239.
9. Lone, F. A. 2005. The Exploration of Uri Sector, Kashmir Valley. Shipra Publications, Delhi. India.
10. Naqshi A R, Baba M Y & Ara S, Ethnobotanical studies of Kashmir- Jhelum Valley, Proceedings of Recent advances in Medicinal, Aromatic, and Spice crops in India, New Delhi, (1992) 371-379.
11. Sullivan K & Shealy C N, Complete Natural Home Remedies. (Element Books Limited, Shaftesbury, U. K.), 1997, 3-5.
12. Stewart R R. An Annotated catalogue of the Vascular Plants of West Pakistan and Kashmir, (Fakhri Press, Karachi, Pakistan), (1972).
13. Utkarsh G M, Gadgil M & Rao P R S, Intellectual property rights on biological

resources: Benefiting from biodiversity and peoples knowledge, Curr Sci, 77 (11) (1999)1418-14