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Full Length Research Paper

Studies on traditional knowledge of economically important plants of Kaghan Valley, Mansehra District, Pakistan

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In this research paper, efforts have been made to document the traditional knowledge of economically important plants of Kaghan Valley. Studies were conducted during 2009 to 2010 in the months of June to August. As a result, 102 important plant species belonging to 93 genus and 61 families were recorded from all available sources including botanical name, local name, status, part used and economical importance. These plants were classified for their traditional medicinal and economic uses but many of these plants have more than one local use. The plants were used commonly as fuel wood, forage/fodder, medicinal, edible, shelter making, vegetables, timber wood, furniture wood etc. It is expected that this effort will also serve as an educational tool for students, researchers and plant taxonomists.

Key words: Traditional knowledge, economically important plants, Kaghan Valley.

INTRODUCTION

Kaghan Valley is situated between latitudes 34°14′ and 35 °11′ N and longitudes 72° 49′ to 74° 08′ E. Climatically, the study area falls in the following ecological zones: Sub-tropical Chir-Pine, moist temperate, dry temperate, sub alpine birch forest, alpine and snow covered peaks. The highest peaks of the valley are Malika Parbat (5,291 m), Musa Ka Musalla (4,046 m) and Makra Top (3,885 m). The average mean minimum and maximum temperatures are 22 and 40°C respectively. November, December, January and February are the coldest months while other months are moderate.

Locals have been utilizing indigenous plants for various purposes over many generations. Ethnobotany is the study of how people of a particular culture and region make of use of indigenous plants (WHO, IUCN4 and WWF, 1993) and is necessary for understanding the interactions between man and natural resources. It is gaining increasing interest across the world (Ghorbani, 2005). Ethnobotanists explore how plants are used for such things as food, shelter, medicine, clothing, hunting and religious ceremonies (Amsallem, 2001). Ethnobotanical information does not only entail listing the traditional uses of plants but also helps ecologists, pharmocologists, taxonomists, watershed and wild life managers in their efforts to improving the wealth of an area. Ethnobotanical research addresses the characterizing traditional knowledge to establish priorities with the local community in order to ensure that local values are translated into rational use of resources and effective conservation of biological diversity and cultural knowledge. Plants as a bioresource are responsible for the socioeconomic upliftment of an area and its people.

In Pakistan, some ethnobotanical studies have also been carried out (Tariq et al., 1995; Shinwari and Khan, 1997, 1998; Durrani et al., 2003; Gilani et al., 2003). The ethnobotany of some parts of the Swat Valley has also been reported (Hussain et al., 1995; Hussain and Sher, 1998; Sher et al., 2003, 2004; Hussain et al., 2004,

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2005). According to literature, Flora of Pakistan (Nasir and Ali, Nos. 217) along with Stewart's Annotated Catalogue (1972) are the major sources of information in the field of economic botany. It is clear from the literature that although some sporadic information is available about the flora of this region, little effort has been made to document the indigenous knowledge of plants of Kaghan Valley. The study was designed to enlist the economically important plant species and document the traditional uses of the plants of the study area.

MATERIALS AND METHODS

A questionnaire was developed to interview local inhabitants regarding the economic importance of plants in the field. Based on this information, the economical importance of plants of the study area has been determined.

Plants were collected and data regarding traditional uses have been done periodically in various flowering and /fruiting seasons during 2009 to 2010. The plants were pressed and dried in blotting papers in the fields. Collected plant materials were preserved by using 3.5% mercuric chloride in ethyl alcohol. These dried and poisoned specimens were mounted on "Herbarium Sheets" and labeled.

Identification of collected plant materials was done by using Flora of Pakistan (Fascicle series 1-217) and studying more specimens from the Kaghan Valley lying at various existing herbaria of Pakistan.

RESULTS

The results are presented in Table 1. A total of 102 plant species' ethnobotanical uses were recorded. Local people use these plant species for different purposes including fuel wood, forage/fodder, medicinal, edible, making shelter, vegetables, timber wood and furniture wood.

DISCUSSION

The results showed that plant species were locally used for various purposes. The traditional uses included medicine, fuel wood, fodder, edible, shelter, vegetable, timber, furniture wood, fences and hedges and for cleaning teeth. Different workers reported the ethnobotanical uses of plants in different areas of Pakistan. Haider and Qaiser (2009) reported that 83 plant species of Chitral Valley are being used locally for various purposes, especially medicinal plants for the treatment of different ailments. An ethnobotanical study of coastal plants of Hub, Lasbela District, Balochistan was conducted by Qasim et al., (2010). He recorded 48 wild coastal plant species used for 12 different purposes including fodder, medicine, food, house hold utensils, for increasing milk production in cattle and other uses. Ibrar et al. (2007) reported 97 plant species from ethno-botanical information in Ranyal Hills District, Shangla, Pakistan and classified them into their traditional, medicinal and economic uses such as; fuel species, forage/fodder species, medicinal species, edible species, species used for making shelter, vegetables species, poisonous species, ornamental species, timber wood species, furniture wood species, species used for fencing, honey bee plants, species for agricultural tools, species used as flavoring agents, species for making mats and baskets, species used with religious belief, species for cleaning teeth, species as tea substitute, fiber yielding species, species as adhesive, irritant species and species for making pens. Ambara et al. (2003) conducted an ethnobotanical study on Gokand Valley, District Buner, Pakistan. He documented 138 plant species which were being used by local inhabitants as fodder and forage, fuel wood, vegetable, timber wood, making hedges and fences and edible fruits.

Plants for the treatment of different ailments have been in use from time immemorial. Even in the modern age, in developed countries, people still rely on traditional system of healthcare not only because of its low price, but also due to very less side effects as compared to modern alleopathic medicines. That is why they are being used extensively world over especially in third world countries. The local people of Kaghan Valley have been using plant resources for their various livelihood. The local people know the beneficial plants and their economical usage through experience and ancestral long utility. It is recommended that the local community should be educated regarding the importance, pre and post harvest methods, of plant resources found in their area.

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Table 1. Economically important plants of Kaghan Valley.

S/N	Botanical name	Local name	Family	Habit	Part used	Ethno-botanical Importance
1	*Abies pindrow* Royle	Paludar	Pinaceae	T	Stem	It is used as a timber tree for construction of building and furniture. Tinctures or decoction of the dried leaves is useful in cases of cough, asthma, chronic bronchitis etc.
2	*Acer caesium* Wall. ex Brandis	Tarkanna, Chain	Aceraceae	T	Wood	Wood may be used for making agricultural implements and also as fuel and soil binder.
3	*Adiantum venustum* Linn.	Sraj, Fern	Pteridaceae	F	Whole plant	Leaves are employed as febrifuge with pepper and in catarrhal affections along with honey.
4	*Aesculus indica* (Wall. ex Camb.) Hook. f.	Bankhore	Hippocastanaceae	T	Seeds	The leaves are used as fodder where as its bark is used as tonic. The fruit is eaten by livestock and used in rheumatic pains. The wood is used for fuel purposes.
5	*Ailanthus altissima (Mill.)* Swingle	Darawa	Simaroubaceae	T	Whole plant	It is cultivated as a roadside tree on hills for prevention of soil orison.
6	*Artemisia absinthium* L.	Vilayathi afsanthin.	Asteracere	S	Whole plant	It is used for inflammation in liver and menstrual disorders.
7	*Arisaema jacquemontii* Blume	Cobra snake	Araceae	H	Whole plant	Camouflage for snakes in coniferous temperate zone
8	*Astragalus psilocentros* Fisch.	Bankantha	Papilionaceae	S	Whole plant	Local people use it for fencing and may also be used for fuel purposes in winter season.
9	*Asparagus racemosus* Willd.	Shatavar	Asparagaceae	H	Whole plant	The roots tubers are used in fever, rheumatism and as sexual tonic.
10	*Bergenia ciliate* (Haw.) Sternb.	Zakhm-e-Hayat	Saxifragaceae	H	Whole plant	It is used as tonic in fever. The rhizome is regarded as antidotal and diuretic. It is used for relieving pain in the chest and ribs due to excess exposure to cold.
11	*Berberis lycium Royle*	*Sumblu*	Berberidaceae	S	Whole plant	A brown extract from roots and lower parts when mixed with water may be used as cooling agent or tonic. It is also used as an eye lotion.
12	*Brassica campestris* Linn.	Sarsoon	Brassicaceae	H	Whole plant	Leaves and young stem are cooked as spinach (Sag). Whole plant is given as fodder to milk producing cattle to increase milk production.

Table 1. Contd.

13	*Broussonetia papyrifera* (L.) L 'Herit ex Vent.	Jangli toot,	Moraceae	T	Whole plant	Source of fuel wood for locals, shade plant and soil binder.
14	*Bistorta amplexicaulis* (D. Don) Green	Masloon, Bistorta	Polygonaceae	H	Whole plant	The rhizome is used for making tea and decoction. The decoction is diuretic and also used as expectorant and in stomach disorders. It is also used in veterinary medicine.
15	*Colchicum luteum* Baker	Suranjan-e-Talakh	Colchicaceae	H	Corm	Corm is laxative, carminative, prescribed in rheumatism, gout and diseases of the spleen and liver.
16	*Cannabis sativa* Linn.	Bhang	Cannabaceae	H	Whole plant	A strong narcotic, derived from the resin of stem, leaves, flowers, fruits etc., Charas is obtained by rubbing of the leaves, young twigs, flowers and young fruits.
17	*Capsella bursa -pastoris* Moench.	Chambaraka	Brassicaceae	H	Whole plant	The plant is used as a fodder.
18	*Cedrus deodara* (Roxb. ex D. Don)	Diar	Pinaceae	T	Stem	The wood is very durable and termite does not attack this wood therefore it is used for construction and furniture purposes.
19	*Cedrela serrata* Royle	Darawa	Meliaceae	T	Leaves Wood	Leaves and bark are used to treat fever, diabetes, dysentery, blood diseases, skin diseases etc. Wood is used for making furniture, construction and as fuel wood.
20	*Celtis australis* L.	Batkalar, Nettle tree.	Ulmaceae	T	Leaves Stem	Leaves are used as fodder for cattle, goats and sheep. Stem is used for making agricultural implements, handicrafts, tool handles etc.
21	*Cichorium intybus* Linn.	Kasni	Asteraceae	H	Whole plant	Root is used for stomach diseases and as a diuretic. Seeds may be used as carminative, tonic and in jaundice and chronic fevers and for renal stones.
22	*Chenopodium album* Linn.	Kachmach, Mako	Solanaceae	H	Leaves Seeds	Leaves are used as spinach (Sag).
23	*Clematis montana* Buch.-Ham. ex DC	Langi	Ranuculaceae	S	Leaves Branches	Leaves and soft branches are used to cure skin infection (Chambal), kill germs and worms in the wounds of cattle and dogs.
24	*Convolvulus prostrates* Forssk	Dodak	Convolvulaceae	H	Whole plant	The plant is used as fodder by cattle, vegetable and as a coolant in hot weather.

Table 1. Contd.

25	*Coriandrum sativum* Linn.	Dhania	Umbeliferae	H	Fresh leaves	Fresh leaves are used in chutneys, salad, curries as condiment and flavoring agent.
26	*Cuscuta reflexa* Roxb	Amar bel	Cuscutaceae	P	Whole plant	The plant is used internally in protracted fevers. An infusion of the plant is used as a wash for sores.
27	*Daphne mucronata* Royle	Kutilal	*Thymelaeaceae*	S	Leaves Fruit	The leaves are poisonous but are tolerated by goats; can be applied to abscesses. The bark is used in bone diseases and for washing hair.
28	*Datura stramonium* L.	Datura	Solancea	H	Whole plant	The juice of the fruit is applied to the scalp for curing dandruff and hair breakage.
29	*Desmodium gangeticum* (Linn) DC.	Salwan	Papilionaceae	S	Roots	The roots are used in diarrhea, chronic fever, cough, vomiting, asthma, snake bite and scorpion stings.
30	*Dioscorea bulbifera* Linn.	Ratalu	Dioscoreaceae	H	Tuber	The rhizomes are used as diuretic. The plant is also used as fish poison.
31	*Duchesnea indica* (Andr.) Focke	Budimewa	Rosaceae	H	Whole plant	Fruit is edible but tasteless and looks beautiful.
32	Diospyrus lotus *Linn*	Amlok	Ebenaceae	T	Fruit	Fruit is edible and a source of income for locals residing in hilly areas.
33	*Dipsacus sativus* (Linn.) Honck.	Buti	*Dipsacaceae*	H	Floral parts	The floral scales are used for teasing or raising the nap on woolen cloth.
34	*Ephedra gerardiana* Wall ex. Stapf	Bata	Ephedraceae	S	Whole plant	It is a source of alkaloid ephedrine, used medicinally. Ephedrine nasal drops are used for nasal congestion.
35	*Euphorbia helioscopia* Linn.	Dodal	Euphorbiacea	H	Whole plant	Although its milky latex is known to be poisonous and cause swelling on the skin, seeds with roasted peppers are given in cholera; oil is said to be purgative.
36	*Equisetum ramosissimum* Desf.	Jorter, Horse tail	Equisetaceae	H	Whole plant	The plant is a cooling medicine and is given in gonorrhea.
37	*Ficus carica* L.	Phogwara	Moraceae	T	Fruit	Its fruits are edible and are used as a vegetable which is very delicious when cooked with lassi known as “Phagwala”, a traditional dish in the Hazara Division.

Table 1. Contd.

38	*Fragaria nubicola* Lindl. ex Lacaita	Budi Meva	Rosaceae	H	Whole plant	Whole plant is grazed by cattle. Fruit is edible but tasteless and looks beautiful.
39	*Fraxinus hookeri* Wenzing	Sum Ashtree	Oleaceae	T	Wood, bark and leaves	The wood is highly valued for tools, rifle butts, furniture etc. Bark is used as astringent and tonic.
40	*Fumaria indica* (Hausskan) Pugsley	Papra	Fumariaceae	H	Whole plant	The plant is used as a diuretic and blood purifier. The herb is also used in fever and influenza.
41	*Grewia optiva* Drum. ex. Burret	Thamanr	Ulmaceae	T	Bark Wood	Wood is used for construction of mud houses.
42	*Geranium wallichianum*	Ratan Jot	Geraniaceae	H	Whole plant	The plant is diuretic and astringent.
43	*Hedra nepalenses* Alin Auct	Harbambal	Araliaceae	C	Leaves	Fresh leaves are used to cure diabetes. The leaves are used as fodder for goats and sheep.
44	*Hyoscymus niger* L.	Ajwain khurasani,	Solanaceae	H	Whole plant and Seeds	It is valuable as a nervous sedative. It is also used by locals in veterinary practices as urinary sedative
45	*Hypericum perforatum* L.	Kasni	Hypericaceae	H	Flowers	The flowers are used for relieving body pains and tea preparation.
46	*Indigofera heterantha* Wall. Ex Brandis.	Kainthi	Papilionaceae	S	Branches	Its branches are used for basket making and in the roof material of mud houses.
47	*Jasminum officinale* Linn	Chambeli	Oleaceae	S	Flowers	The flowers are used as cooling agents externally and in headache, skin diseases and weak eyes.
48	*Juglans regia* Linn.	Kore Birmokh	Juglundaceae	T	Whole plant	The wood is excellent for furniture making, carving and for gunstocks. The bark is also good for its gum and sold in the local market under the name “Dandasa” which is used for cleaning teeth.
49	*Lonicera hispida* Pall.	Loony, Loonr	Caprifoliaceae	S	Whole plant	It is recommended in the treatment of boils and dysentery.
50	*Mallotus philippensis* (Lam) Muell. Arg	Kamila	Euphorbiacea	T	Seeds	Leaves are used as fodder for cattle, goats, and sheep. Wood used in thatching, tool handles and as fuel.
51	*Mallus domestica* Borkh	Saib	Rosaceae	T	Fruit	Its fruit is edible and its syrup is used as tonic.

Table 1. Contd.

52	*Melia azaderach* Linn.	Dhrek	Meliaceae	T	Fruit	Fruit is eaten by goats and sheep and the stony endocarps are used as beads. Leaves may be used as insecticide while fruit may be used for the treatment of skin diseases and as a fodder by livestock.
53	*Mentha longifolia* (Linn.), Huds	Chitta Podna	Labiateae	H	Leaves	Fresh and dry leaves are used in local chutneys, spice, stimulant and carminative in curries.
54	*Myrsine africana* Linn.	Gokhan	Myrsinaceae	S	Fruit	Fruit is used as laxative in dropsy and colic; ointment prepared from it considered to be effective against worms and skin diseases.
55	*Nasturtium officinale* R. Br.	Tara mira	Brassiceae	H	Whole plant	Leaves of plant are cooked as spinach that is, sag.
56	*Nerium oleander* Linn.	Kaner	Apo cynaceae	S	Whole plant	Leaves are very poisonous. Root paste is used in scorpion sting and snakebite.
57	*Oenothera rosea* L'Her. ex . Ait.	Buti	Onagraceae	H	Whole plant	Used as fodder by livestock, it can be used as fuel when dry.
58	*Otostegia limbata* (Benth.) Boiss.	Chiti Buti,	Labiatae	S	Leaves	Juice of the leaves is used as children's gum and powder of the plant is mixed with butter and used for the treatment of wounds.
59	*Oxalis corniculata* Linn.	Khati Booti, Jandora	Oxalidceae	H	Whole plant	Young leaves are used as spinach (sag). It is also used as fodder for cattle, goats and sheep.
60	*Peganum harmalla* L.	Harmal	Zygophyllaceae	H	Seed	Seed powder is used for reducing temperature in chronic malaria.
61	*Periploca aphylla* Decne.	Batta	Asclepiadaceae	S	Whole plant	Bark decoction is purgative. Milky juice is locally applied to tumors and swellings.
62	*Pinus roxburghii* Sargent.	Chir	Pinaceae	T	Stem	Wood may be used for construction purposes and furniture making. It is valuable for its resin extract which may be used for varnishes and Turpin.
63	*Pinus wallichiana* A. B. Jackson	Biar, Biari	Pinaceae	T	Stem	Wood may be used for construction purposes and furniture.
64	*Plantago major* Linn.	Isamgol	Plantaginaceae	H	Leaves Seeds	Leaves are cooling, alternative and diuretic. The seeds are used to cure the stomach disorder.
65	Plantago lanceolata *Linn.*	Ispamgol	Plantaginaceae	H	Seeds	Seeds are used as purgative and haemostatic. Leaves are applied to wounds.
66	*Platanus orientalis* Linn.	Chinar	Platanaceae	T	Wood	The wood is used in some places for making gun carriages, small painted boxes and for cabinetwork and paneling.

Table 1. Contd.

67	*Podophyllum hexandrum* Royle	Bankakri	Podophyllaceae	H		Fruits are edible and rootstock has medicinal importance.
68	*Populus alba* L.	Safeda	Salicaceae	T	Stem	It is a roadside tree. Mostly used as fuel wood and timber. It is valued in the match industry.
69	*Punica granatum* Linn.	Druna	Punicaceae	S	Different parts of the plant	Different parts of the plant are used to cure diarrhea, dysentery, piles, diabetes, intestinal worms, fever etc.
70	*Prunus domestica* Linn.	Lucha	Rosaceae	T	Leaves Fruit	Leaves are used as fodder for goats and sheep. Fruit is edible; unripe fruit is used in chutneys.
71	*Prunus armeniaca* Linn.	Hari	Rosaceae	T	Fruit	The flesh of the fruit is dried. The seeds are eaten as almonds and fruit is eaten as dried and fresh.
72	*Prunus persica* (Linn.) Batsch	Aru	Rosaceae	T	Fruit	Fruit is edible. Unripe fruit is used in chutneys. The plant is used as firewood when dry.
73	*Pyrus pashia* Buch.-Ham. ex. D. Don	Batangi	Caesalpinaceae	T	Fruit Wood	Fruit is edible while wood may be used as timber and fuel.
74	*Pyrus communis* Linn.	Batang Nashpati	Rosaceae	T	Fruit Whole plant	Fruit is edible while leaves are used as fodder for goats, sheep, and cattle.
75	*Pyrus pyrifolia* Linn.	Desi Nakh	Rosacea	T	Fruit Leaves	Fruit is edible while leaves are used as fodder.
76	*Quercus incana L.*	Rein	Fagaceae	T	Bark Wood	Wood used for making agricultural implements, ploughs, tool handles, for thatching and as fuel and timber wood.
77	*Robinia pseudo-acacia* Linn.	Kikar Behashti darakht	Papilionaceae	T	Whole plant	Used as fuel wood and commonly planted on road sides to prevent soil erosion.
78	*Rubus fruiticosus L.*	Garachey	Rosaceae	S	Fruit	Fruit is delicious and eaten by local inhabitants.
79	*Rumex dentatus* L.	Jangli Palak	Polygonaceae	H	Whole plant	Used as fodder and for treatment of wounds.
80	*Rumex hastatus* D. Don	Khatimal	Polygonaceae	S	Whole plant	Young leaves are used in chutneys and spinach (sag). The plant is also used as fodder.

Table 1. Contd.

81	*Ranunculus arvensis* Linn.	Chihoma	Ranunculaceae	H	Leaves	Fresh leaves are cooked as vegetable (sag) and also used as fodder for cattle.
82	*Salvia moorcroftiana* Wall. ex Benth.	Kalijari	Labiatae	H	Whole plant	The plant is used to treat diarrhea, gas trouble, stomach disorder and cough.
83	*Sassurea heteromalla* (D. Don) Hand.-Mazz	Batula	Asteracea	H	Leaves	Crushed leaves are applied to wounds. The seeds are known as carminative; also considered as a cure for horse bite.
84	*Sarcococca saligna* (D. Don) Muell.	Bansathera	Buxaceae	S	Leaves and shoots	The leaves and shoots are boiled and applied on swollen joints or in pain.
85	*Skimmea lauriola* (DC.) Sieb and Zucc	Ner	Rutaceae	S	Leaves	A small strong scented shrub, the leaves are used in medicine and when crushed, it gives a musky odor. Locally it is used to reduce temperature.
86	*Senesio chrysanthemoides* DC.	Hand	Asteraceae	H	Whole plant	Its root extract is given to children in the treatment of cholera and lungs diseases.
87	*Sorbaria tomentosa* (Lindl.) Rehder	Sorbaria	Rosaceae	S	Leaves and branches	Leaves and branches are used as fodder by livestock. Used as fuel wood and soil binder.
88	*Solanum surattense* Burn.	Kandiari	Solanaceae	H	Leaves Whole plant	Plant is used in various animal diseases in cattle. Stem, flower and seeds are carminative.
89	*Solanum nigrum* L.	Kachmach Mako	Solanaceae	H	Fruit Shoots	Its fruit is edible while the young shoots are cooked as a pot herb. The juice of this plant is said to be diuretic, and used in the treatment of enlarged livers.
90	*Swertia ciliata* (G. Don) B. L. Burtt	Chirata	Gentianaceae	H	Whole plant	Used as tonic and febrifuge by local inhabitants.
91	*Trichodesma indicum* (L.) R. Br.	Handusi Booti	Boraginaceae	H	Whole plant	The plant is used to cure diarrhea, dysentery etc.
92	*Torilis leptophyla* (L.) Reichb	Sag	Umbellifeare	H	Leaves	Young leaves are cooked as spinach (Sag). Whole plant is also used as fodder for cattle.
93	*Tribulus terrestris* Linn.	Itsit	Zygophylaceae	H	Whole plant	The fruit is used in urinary and cough diseases.

Table 1. Contd.

94	*Taraxacum officinale* Weber	Hand	Asteraceae	H	Rhizomes	Rhizome is used to treat jaundice. Young leaves are cooked as spinach (Sag). Cattle, goats and sheep also graze the plant.
95	*Trachyspermum ammi* (L.) Sprague	Ajwain	Umbelliferae	H	Seeds	This species is commonly cultivated and its fruit is used as carminative as well as a spice.
96	*Trifolium repens* Linn.	Shatal	Papilionaceae	H	Whole plant	Extensively cultivated as an important fodder plant.
97	*Urtica dioica* Linn.	Kari	Urticaceae	S	Leaves Stem	Its leaves are used as vegetable (Sag) and stem may be used for fiber making.
98	*Valeriana jatamansi Jones*	Mushbala	Valerianaceae	H	Rhizome	The rhizome yields economically important aromatic oil which is used in the preparation of tranquilizers and a remedy for the suppression of urine. It is also an important ingredient in perfumed powder.
99	*Verbascum thapsus* L.	Gider tamaku	Scrophulariaceae	H	Whole plant	The plant is used for the treatment of stomach disorders and dysentery in cattle.
100	*Viburnum cotinifolium* D. Don	Guch, Taliana	Caprifoliaceae	S	Fruit Branches Leaves	The fruit is sweetish and edible. Its leaves and branches may be used as fodder for livestock.
101	Vitex negundo *Linn.*	Marwan	Verbenacea	S	Shoot Leaves	The young shoots are used in basket making. Generally cultivated as an ornamental; planted along water channel to control soil erosion. Leaves are used as insecticide and are laid over stored grains to ward off insect.
102	*Zanthoxylum armatum* Dc. Prodr	Timber	Rutaceae	S	Whole plant	Fruit and branches of the plant are used to cure gas trouble and indigestion. Fruit and flowers are used in chutneys, curries, as aromatic and flavoring agent and to improve taste.

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