

## ETHNOBOTANICAL STUDY OF USEFUL CLIMBERS/TWINERS OF DISTRICT KOTLI, AZAD JAMMU & KASHMIR

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### ABSTRACT

Ethnobotanically important plants are used for various resolves in daily life including medicines, food, fodder, vegetables, etc. Medicinal plants are necessary for treatment of various diseases and production of various medicines. For this purpose climbers/twiners are extensively used as medicine. The local people of District, Kotli use 36 climbers/twiners of the vascular plants for medicine, vegetable and fodder. As traditional culture is disappearing the knowledge about the plant wealth is going to be lost. The information on climber species is obtained while studying the flora of District Kotli, Azad Kashmir. For each plant its family, botanical name, vernacular name, flowering period is given. A total of 36 climber/twiner species belonging to 18 families were recorded for the medicinal, vegetable and fodder. Among all the families family Cucurbitaceae were found to be most abundant having 7 species followed by Convolvulaceae and Papilionaceae with 4 species each.

**Key words:** Ethnobotany, Climber, Twiners, District Kotli, AJK

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### INTRODUCTION

Plants are essential for healthier life because they provide us medicines, which are both effective and safe, without any side effect. Plants play a vital role in our lives more than animals mainly due to their extraordinary array of diverse class of biochemicals with a variety of biological activities (Cotton, 1996; Buckingham, 1999).

Ethnobotanical information on medicinal plants and their uses by indigenous cultures is useful not only in the conservation of traditional cultures and biodiversity, but also for community health care and drug development. This information is utilized as a guide for drug development under the premise that a plant which has been used by autochthonal people over a long period of time may have an allopathic application (Farnsworth, 1993).

Azad Jammu & Kashmir, Pakistan is ample in plant diversity because of the branched out habitats, such as lakes, rivers, streams, springs, nullahs, hayfields, steep mountain slopes and roads, waste lands, cultivated fields, etc. The present study was accomplished to document the ethnobotanical data on the useful climbers/twiners of District Kotli, that lies in between longitude 73° 6' to 74° 7' East and latitude 33° 20' to 33° 40' North (Topo sheet No. 43<sup>G</sup>/15). It is about 700m-1400m above the mean sea level and is bounded on the Eastern side by Occupied Kashmir, Western side by Rawalpindi (Pakistan), Southern side by Mirpur and Northern side by District Poonch. The population is 0.558 million, according to census 1998. Its area is 1862sq.km. The annual rainfall is 1227.91 mm, maximum during July to August, i.e. 306.93 mm and 256.53 mm, respectively, while low during winter. Thus average monthly rainfall is 102.32 mm (Anon., 2006). Humidity is low during the day time as compared to night. January, February, August and September are more humid months than May and June. District Kotli is divided into Kotli, Sehnsa and Nikyal Tehsils.

The ethnobotany of Chikar and allied areas of District Muzaffarabad was investigated by Saghir *et al.*, (2001) and 53 plant species belonging to 48 genera of 33 families were found useful mostly as medicinal, fuel, fodder, fruit, timber and vegetables. Similarly, in the present ethnobotanical study, it was noticed that the local inhabitants largely depended upon the local flora for food and health.

The ethnobotanical study on useful shrubs of District, Azad Kashmir was carried out by Ajaib *et al.* (2010) and 38 species of 36 genera belonging to 25 families were found useful in every day life of local denizens as medicinal, fuel, shelter, fodder/forage and in making agricultural tools. Most of the shrubs were noticed having more than one ethnobotanical uses.

### MATERIALS AND METHODS

Altimeter, Camera, plant presser, blotters, old newspapers, ropes, hand lens, field book, pencils, GPS was carried during field survey. General information about the climbers/twiners was collected from the local people. About 100 local respondents including both male and female were interviewed. Plant collection and data recording

for local uses of these plants in various localities was done by carrying the collected climbers to the local people. The questions about the indigenous uses of climber plant species were asked in Urdu. Plant specimens collected from the area were dried, pressed and mounted properly. They were identified with the help of Flora of Pakistan Nasir and Ali (1970-1989), Ali and Nasir (1990-1992), Roberts *et al.* (1995) and Ali and Qaiser (1992-2007). The plant specimens were submitted to Dr. Sultan Ahmad Herbarium, GC University, Lahore, Pakistan.

## RESULTS

During the present probe based on ethnobotanically useful climbers/twiners plants of District Kotli, Azad Kashmir, a total of 26 species belonging to 16 families were collected interviewed for their local uses peculiarly in medicines. The data collected for various uses of these species is presented in below.

1. Botanical name: *Asparagus capitatus* Baker subsp. *gracilis* Royle  
 Family: Asparagaceae  
 Local name: Shah Gandal  
 Flowering period: March-April  
 Part used: Whole plant  
 Local uses: Root and fruit is aphrodisiac, tonic. Shoot is used as vegetable.
2. Botanical name: *Cardiospermum halicacabum* L. var. *microcarpum*  
 Family: Sapindaceae  
 Local name: Lataphatkari  
 Flowering period: Sept.-Dec.  
 Part used: Whole plant  
 Local uses: Stem and leaves are used as vegetable. Dried leaves crushed to make tea used for itching of skin. Fresh crushed leaves used as a poultice on swellings. Leaves, seeds and root are used for rheumatism, stiffness of joints and snakebite. Seeds are also useful for nervous disorders.
3. Botanical name: *Cissampelos pariera* L. var. *hirsuta* (DC.) Forman  
 Family: Menispermaceae  
 Local name: Batrar  
 Flowering period: June-September  
 Part used: Whole plant  
 Local uses: The whole plant with roots is used for stomach complaints, diarrhea and dropsy. The leaves are applied on wounds and snake-bites.
4. Botanical name: *Clematis graveolens* Lindl.  
 Family: Ranunculaceae  
 Local name: Tootal  
 Flowering period: March-April  
 Part used: Whole plant  
 Local uses: The plant extract is used to kill worms in wounds of cattle. It is mixed with *Cuscuta reflexa* to bath children suffering in sever weakness.
5. Botanical name: *Clematis grata* Wall..  
 Family: Ranunculaceae  
 Local name: Tootal  
 Flowering period: April-August  
 Part used: Whole plant  
 Local uses: The plant extract is used to kill worms in wounds of cattle.
6. Botanical name: *Convolvulus arvensis* L.  
 Family: Convolvulaceae  
 Local name: Laili, Hiranpadi  
 Flowering period: March-November  
 Part used: Whole plant  
 Local uses: It is used as fodder for cattle. The root is purgative and diuretic.

7. Botanical name: *Cryptolepis buchananii* Roemer & Shultes  
Family: Asclepiadaceae  
Local name: Grnu, Karanta  
Flowering period: May-July  
Part used: Leaves and latex  
Local uses: Latex is applied externally to heal up the wounds where as leaves given to cattle as galactagogue.

8. Botanical name: *Cucurbita maxima* Duch. ex Lam.  
Family: Cucurbitaceae  
Local Name: Kandoli  
Flowering period: April-Sept.  
Part used: Fruit and Seeds  
Local uses: Fruit is edible and used as vegetable. Fruit is massage on irritated and burning skin. Seeds are used as tonic diuretic and anthelmintic.

9. Botanical name: *Cuscuta reflexa* Roxb.  
Family: Cuscutaceae  
Local name: Neela Dhari  
Flowering period: August-Sept.  
Part used: Whole plant  
Local uses: Its infusion is antilice. It is also used in skin diseases such as anemia and other weaknesses of children.

10. Botanical name: *Diplocyclos palmatus* (L.) C.Jeffrey  
Family: Cucurbitaceae  
Flowering period: July-October  
Part used: Whole plant  
Local uses: Whole plant extract is applied externally for headache. Seeds and fruits are used in dysentery.

11. Botanical name: *Dioscorea bulbifera* L.  
Family: Dioscoreaceae  
Local name: Gocatti  
Flowering period: July-Sept.  
Part used: Bulbils  
Local uses: Boiled bulbils are eaten for food. Bulbils are also used as birth control pill.

12. Botanical name: *Dioscorea melanophyma* Burkill & Prain  
Family: Dioscoreaceae  
Local name: Parkhi  
Flowering period: August-October  
Part used: Leaves and fruit  
Local uses: Leaves and fruits are used in eye tumors in cattle.

13. Botanical name: *Ficus sarmentosa* Buch.  
Family: Moraceae  
Local name: Phowari  
Flowering period: May-Sept.  
Part used: Bark, fruit and leaves  
Local uses: Fruit and leaves are used for hemorrhagic septicemia and arthritis. Bark is useful for ring worms.

14. Botanical name: *Galium aparine* L.  
Family: Rubiaceae

Local name: Lahndra  
English Name: Catchweed Bedstraw, Cleaverwort, Goose grass  
Flowering period: March-May  
Part used: Whole plant  
Local uses: Plant extract is useful for dropsy, diuretic, urinary bladder and kidney infection. It is also used in cancer and pus blisters.

15. Botanical Name: *Gloriosa superba* L.  
Family: Colchicaceae  
Local Name: Sanp booti  
Flowering period: July-September  
Part used: Whole plant  
Local uses: It is used as ornamental plant. Tubers used in rheumatism, and sexual stimulant but very small doses because tubers are very toxic and may cause death.

16. Botanical Name: *Hedera nepalensis* K. Koch.  
Family: Araliaceae  
Local Name: Banjali, Parkhi  
Flowering period: October-April  
Part used: Whole plant  
Local uses: Leaves are useful for diabetes, cathartic and diaphoretic. Berries are purgative and use to cure febrile disorders.

17. Botanical Name: *Helinus lanceolatus* Wall.  
Family: Rhamnaceae  
Local Name: Haldur  
Flowering period: March-April  
Part used: Whole plant  
Local uses: Plant extract is useful for scabies and skin diseases.

18. Botanical Name: *Hiptage benghalensis* (L.) Kurz  
Family: Malpighiaceae  
Local Name: Grun, Endra  
Flowering period: March-April  
Part used: Leaves  
Local uses: The leaves and young branches are used for diabetes, rheumatism and skin diseases.

19. Botanical name: *Ipomoea eriocarpa* R.Br.  
Family: Convolvulaceae  
Local name: Budhi bel.  
Flowering period: July-Oct.  
Part used: Whole plant  
Local uses: The plant powder and extract is used for cancer, eczema and skin disorders.

20. Botanical name: *Ipomoea hederacea* Jacq.  
Family: Convolvulaceae  
Local name: Neeli bail  
Flowering period: July-Oct.  
Part used: Whole plant  
Local uses: It is used as an ornamental plant. Root is purgative. Dried seeds are toxic, anthelmintic and hallucinogenic. Seed extract is also used to promote menstruation.

21. Botanical name: *Ipomoea pes-tigris* L.  
Family: Convolvulaceae  
Local name: Goj Bahrwa  
Flowering period: August-October.

Part used: Stem, Leaves and Fruit  
Local uses: Stem and leaves are used for eyes and skin disorders. Fruit with persistent calyx is used in impotency.

22. Botanical name: *Loranthus longiflorus* Desr.  
Family: Loranthaceae  
Local name: Parvikh  
Flowering period: Dec.-February  
Part used: Leaves  
Local uses: Leaves juice is used for diabetes.

23. Botanical name: *Loranthus pulverulentus* Wall.  
Family: Loranthaceae  
Local name: Parvikh  
Flowering period: Dec.-April  
Part used: Leaves  
Local uses: Leaves juice is used for diabetes.

24. Botanical name: *Luffa acutangula* Roxb. Var. *Acutangula*  
Family: Cucurbitaceae  
Local name: Ghia Tori  
Flowering period: June-August  
Part used: Fruit  
Local uses: Tender fruit used as vegetable and a natural remedy for jaundice. Dry fruit is also used as sponge for dish cleaning.

25. Botanical name: *Luffa cylindrica* (L.) Roem.  
Family: Cucurbitaceae  
Local name: Ghia Tori  
Flowering period: May-Oct.  
Part used: Fruit  
Local uses: Tender fruit used as vegetable. Fruit juice is purgative. Dry fruit is also used as sponge for dish cleaning. Seeds are bitter and used as emetic.

26. Botanical name: *Momordica charantia* L.  
Family: Cucurbitaceae  
Local name: Karela  
Flowering period: May-Sept.  
Part used: Fruit  
Local uses: Fruit is used as vegetable. Fruit extract is used as blood purifier, carminative, anti-diabetes and also used for diseases of liver and spleen.

27. Botanical name: *Preacitrullus fistulosus* (Stocks) Pangalo  
Family: Cucurbitaceae  
Local name: Teenda  
Flowering period: March-Sept.  
Part used: Fruit  
Local uses: Tender fruit is used as vegetable. Fruit extract is useful for constipation, digestive disorders, jaundice and liver and diseases.

28. Botanical name: *Pueraria tuberosa* (Roxb. ex Willd.) DC.  
Family: Papilionaceae  
Local name: Bindhari, Vandhari  
Flowering period: March-April  
Part used: Tubers

Local uses: Tubers are used for constipation, cough, rheumatism, dysuria, malarial fever and prevent ageing, tonic, diuretic and strong aphrodisiac. In females it is very useful in nursing mothers as it increase milk flow, enlarges breasts and rejuvenates the skin and premature aging.

29. Botanical name: *Rosa brunonii* Lind. (Syn. *Rosa moschata* auct.)  
Family: Rosaceae  
Local name: Phalwari  
Flowering period: April-June  
Part used: Root and flowers  
Local uses: Root extract is aphrodisiac. Flowers with white rice are used as purgative, anthelmintic and digestive disorders.

30. Botanical name: *Rubia cordifolia* L.  
Family: Rubiaceae  
Local name: Landra bail  
Flowering period: June-Oct.  
Part used: Whole plant  
Local uses: Plant decoction is useful for amenorrhea, febrifuge and antispasmodic.

31. Botanical name: *Rubus ellipticus* Smith  
Family: Rosaceae  
Local name: Peela Akhra  
Flowering period: Feb.-April  
Part used: Whole plant  
Local uses: It is usually cultivated as hedge plant. Fruit is edible and its extract is used as tonic.

32. Botanical name: *Tinospora malabarica* Miers (Syn. *Tinospora cordifolia* auct)  
Family: Menispermaceae  
Local name: Giloe  
Flowering period: March-May  
Part used: Stem, Leaves and Root  
Local uses: Leaves decoction is febrifuge. Stwm and leaves are used for intermittent fever, dysentery, dyspepsia and tonic.

33. Botanical name: *Trichosanthes cucumerina* L. var. *anguina* (L.) Haine  
Family: Cucurbitaceae  
Local name: Parrol  
Flowering period: June-Sept.  
Part used: Fruit  
Local uses: Tender fruit is used as vegetable. Fruit extract is very useful for jaundice and other liver and digestive disorders.

34. Botanical name: *Vicia bithynica* (L.) L.  
Family: Papilionaceae  
Local name: Rawari  
Flowering period: Feb.-July  
Part used: Whole plant  
Local uses: It is used as fodder for cattle.

35. Botanical name: *Vicia hirsuta* (L.) S.F.Gray  
Family: Papilionaceae  
Local name: Rawari  
Flowering period: Feb.-July  
Part used: Whole plant  
Local uses: Fresh plant is served as fodder for cattle.

36. Botanical name: *Vicia sativa* L.  
 Family: Papilionaceae  
 Local name: Muttri  
 Flowering period: July-Sept.  
 Part used: Whole plant  
 Local uses: Flowers are diaphoretic and febrifuge. Paste is locally used in eczema. Flowers are useful for epilepsy and nervous disorders.

## DISCUSSION

During the present investigation it was found that almost all the species of climbers/twiners recorded for their ethnobotanical uses were found medicinally important. This data matches with that of Basu (1991) on the medicinal uses of Indian plants as well as Shinwari *et al.*, (2006) on the medicinal plants of Pakistan. The medicinal plants are necessary for the preparation of various drugs and curing diseases as stated by Qureshi *et al.*, (2007). There are 50,000 registered hakims (herbal healers) in Pakistan (William and Zahoor, 1999). It has been found that traditional herbal medicines are cheaper and often accepted by many people. The younger generation is often adopting the allopathic medicines, thus the traditional knowledge on the medicinal plants and the preparation of medicines from them is only confined to the old people. The treasure of traditional knowledge on the medicinal plants is, therefore under threat (Khan and Khatoon, 2007). A similar study was conducted by Sardar and Khan (2009) in Shakargarh, District Narowal, Pakistan and recorded somewhat similar results. It was also found that most of the palatable climbers were over grazed due to the wild and domestic grazers.

Over utilization not only degraded the local vegetation and natural beauty but also made certain species endangered, for example, *Tinospora malabarica* Miers, *Rubia cordifolia* L., *Helinus lanceolatus* Wall., *Gloriosa superba* L. and *Dioscorea bulbifera* L. were disappearing day by day. Today certain direct crusades such as commercial and subsistence purposes and indirect crusades such as insecure land tenure, poverty and population growth were also influencing the local vegetation. Therefore there is a desperate need for the aegis of this wealth of nature until it vanishes on this planet.

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