Survey on Medicinal Climbers in Meerut District, Uttar Pradesh, India

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Abstract: Due to various factors such as changing environmental conditions, biotic factors, destruction of habitat etc. some useful climber plants species are facing threats for their existence. Conservation, enhancement and sustainable utilization of plant resources are recognized as one of the vital segment in the natural resource management. Survey was conducted in all area of Meerut district during March 2012 to November 2015 to investigate the useful climbers diversity. A total of 37 species of climbers belonged to 29 genera under 17 families were recorded for the first time from Meerut. Maximum number of useful climbers recorded for Convolvulaceae with 12 species, followed by Leguminosae 5 species, Asclepiadaceae 3 species, Cucurbitaceae 3 species, Passifloraceae 2 species, Polygonaceae 1 species, Aristolochiaceae 1 species, Capparaceae 1 species, Vitaceae 1 species, Cuscutaceae 1 species, Piperaceae 1 species, Combretaceae 1 species, Menispermacae 1 species, Zygophyllaceae 1 species and Dioscoreaceae 1 species, Liliaceae 1 species, Arecaceae 1 species (3 monocot). The present study emphasizes the need multipurpose climber plants species and their conservation and sustenance for future generation.

Keywords: Climbers, Meerut, Survey, Useful, Conservation.

INTRODUCTION
Meerut is having prestigious space in the Indian history. The first revolution for freedom of India was started here itself in 1857 by great son of this soil Mangal Pandey. Capital of Kauravs & Pandavas was at Hastinapur. Fertile land of Meerut for growing many species of climbers. The climbers are an important source of ethno botanical utilization and used for curing various ailments by local people. Therefore, the utilization and study of climbers for traditional knowledge is very important. Climbers and creepers are important components of biodiversity in India and are valuable mainly due to their medicinal attributes. The climbers are rooted in soil and weak-stemmed plants (Dutta, 1689); varies from trees and shrubs which are self-supported plants. Climbers germinate on floor and grow for part of their life by winding ground, anchoring or adhering to other plants (Jongkind and Hawthorne, 2005). They represent a large sector of medicinal, ornamental, and play a key role in horticulture fields. Climbers also form an essential part of diet of many insects in times of scarcity of flowers and fruits. Climbers are important part of forest ecosystem. Climbers contribute to their environment by purifiers air quality, Water purifiers, conserving water, preserving soil, and supporting wildlife. They also lower the air temperature and reduce the heat intensity of the greenhouse effect by maintaining low levels of carbon dioxide. Leguminous climbers have nodulation or nitrogen fixation ability. Climbers and creepers are important components of plant diversity and are also valuable for their medicinal uses, nutrient recycling, etc. (Schnitzer and Bongers, 2002). Some important studies on diversity of climbers in different parts of India by Gentry (1991), Jangid and Sharma (2011) suggest that the climbers are forming main components of ecosystem. The conservation of important and endangered medicinal plants, their conservation and the ethnomedicinal uses, including climbers is very essential to establish their appropriate utilization (Mahajan, 2006; Ajaib et al., 2012; Singh et al., 2013). The present study, a total of 38 species of climbers were recorded along with the documentation of significant information regarding their scientific names, common names, families and used for different purposes. It is, therefore, very necessary to document the multipurpose use and conserve it for future purposes. No comprehensive work is available for climbers in the study area; therefore, the objective of the present paper is to document the medicinal climbers of Meerut, Uttar Pradesh and their uses by the local people of the area.
MATERIALS AND METHODS

The study was conducted in Meerut District during March 2012 to November 2015. The survey was done months March, May and September 2012, 2013, 2015 on the all area of Meerut. Study area, Meerut district is located between 77º. 00’ and 78º. 00’ longitude East and 28º. 54’ & 29º. 15’ latitude North (Fig A). The temperature of the district is varies from 4º C in winter to 48º C in summer. The rainy session normally starts in the end of June month. The average rainfall is about 686 mm. The survey involved field work and multipurpose use of climbers information collected from local peoples and various research papers. Tree species were photo-documented by Sony Digital camera modal no. DSC HX1, during the study period. Species identity, were confirmed with the help of the books by R.K. Chakraverty and S. K. Jain (1984), and Y. Rai (2015).

RESULTS

The present study revealed that angiospermic climbers of the studied area were represented by 37 species under 29 genera belonging to 17 families (14 dicot and 03 monocot families). Mostly climbers were wild. Among all families, Convolvulaceae was found to be the most abundant having 12 species followed by Leguminosae 5 species, Asclepiadaceae 3 species, Cuccurbitaceae 3 species, Passifloraceae 2 species, Polygonaceae1 species, Aristolochiaceae 1 species, Capparaceae 1 species, Vitaceae 1 species, Cuscutaceae 1 species, Piperaceae 1 species, Combretaceae 1 species, Menispermacae 1 species, Zygophyllaceae 1 species and Liliaceae 1 species, Dioscoreaceae 1 species, Arecacae 1species (3 monocots). The results of the climbers and their botanical name, common name, families, medicinal uses, status are given in table 1.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Family</th>
<th>Medicinal Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abrus precatorius</td>
<td>Gunja</td>
<td>Laguminosae</td>
<td>Seeds and roots are said to be highly a medicinal for rheumatism and swellings. Small dose taken along with goat milk in empty</td>
</tr>
</tbody>
</table>
| 2  | Antigon leptopus  | Bride's tears | Polygonaceae
A. leptopuus is grown as an ornamental plant. It is used as a nectar source for honey production. Its flowers are used as a remedy for colds, throat constriction. The infusion of dried leaves are used in jaundice. Tuber are eaten for diuretic condition. Aphrodisiac, nervous debility, bronchitis |
| 3  | Asparagus racemosus  | Asparagus | Liliaceae
| 4  | Aristolochia indica  | Birthwort | Aristolochiaceae
Leaves have anti-bacterial activity. The paste of leaves is used in pulmonary problems. Hydrocele, arthritis leucoderma, anthelmintic. The seeds as well as the leaves are used to relieve colic, fever, hydrocoel, diarrhoea and rheumatism. Bet is source of material for making baskets, furniture, and strong ropes etc. Ripe fruits are edible, and source of food for animals. |
| 5  | Caesalpinia bonduc  | Fever nut | Laguminosae
| 6  | Calamus tenuis  | Bet | Areaceae |
| 7  | Capparis zeylanica  | Caper bush | Capparaceae
| 8  | Cissus quadrangularis  | Hadjode | Vitaceae
Root paste is applied to snakebite, boils and swellings. The leaves are a counter irritant applied to boils, swellings and piles. It is used in bone fracture. |
| 9  | Clitoria ternatea  | Aprajita | Leguminosae
Arapjita is used in brain tonic. Leaf paste externally applied for preventing face pimples. Plant paste warmed with mustard oil and wheat flour is applied on joint pain. Used in jaundice, liver complaints. |
| 10 | Coccinia grandis  | Ivy Gourd | Cucurbitaceae
| 11 | Cuscuta reflexa  | Amar bel | Cuscutaceae |
| 12 | Dioscorea bulbifera  | Air potato | Dioscoreaceae
Cordiacdebility, aphrodisiac |
| 13 | Evolvulus sericeus  | Silver dwarf morning glory | Convolvulaceae
| 14 | Ipomoea alba  | Moon vine | Convolvulaceae
The paste of leaves is applied externally in joint pains. |
| 15 | Ipomoea aquatica  | Water spinach | Convolvulaceae
Young leaves are used in curries and soups. Plant paste is applied over body to cure itching. Plant juice used in cases of opium poisoning. Whole plant is used indigestive problems. Used as vegetable. The paste of leaves is used in cutaneous infection. |
| 16 | Ipomoea cairica  | Coast Morning Glory | Convolvulaceae
| 17 | Ipomoea carnea  | Bush morning glory | Convolvulaceae |
| 18 | Ipomoea coccinea  | Blue morning glory | Convolvulaceae
Whole plant cure ulcer and Used as a ornamental purpose |
| 19 | Ipomoea nil  | Obscure morning glory | Convolvulaceae
| 20 | Ipomoea obscura  | Star glory | Convolvulaceae
Fresh leaf juice is given to treat stomach ulcer. |
| 21 | Ipomoea quamoclit  |  | Convolvulaceae
The paste of leaves is used in jaundice. |
| 22 | Lathyrus aphaca  | Jangli matar | Leguminosae
The seed contains a toxic amino-acid which, |
| 23 | Merremia dissecta | Alamo vine | Convolvulaceae | in large quantities, can cause a very serious disease of the nervous system known as 'lathyrism'. The seed is said to be perfectly safe and very nutritious in small quantities. It is used in condiments and medicines. |
| 24 | Merremia hederacea | Woodrose | Convolvulaceae | Merremia hederacea is used in colds, febrile disease, tonsil inflammation, laryngitis as well as leucorrhoea. The paste of seeds is applied externally in joint pains. |
| 25 | Mucuna pruriens | Velvet bean | Leguminosae | |
| 26 | Mukia maderaspatana | Headache Vine | Cucurbitaceae | Leaf extract taken orally to treat stomach problems and indigestion. Boiled extract consumed for treating chest pain and dry cough. The decoction of entire plants is used in cough and cold. |
| 27 | Operculina turpethum | Indian Jalap | Convolvulaceae | |
| 28 | Oxystelma esculentum passiflora incarnata | Dudhilata | Asclepiadaceae | Fresh flowers eaten for treating intestinal ulcer. Rheumatism, jaundice. It is grown as an ornamental plant. It is used as a nectar source for honey production. |
| 29 | Passiflora vitifolia | Purple passion vine Red passion vine | Passifloraceae | The paste of leaves is applied externally in cutaneous infections. The petals are diuretic. |
| 30 | Pentatropis capensis | Ambarve | Asclepiadaceae | respiratory infections and in controlling tumors. |
| 31 | Pergularia daemia | Forsskal | Asclepiadaceae | Emmenagogue, bone fractures. The paste of roots is used in asthma. |
| 32 | Piper longum Quisqualis indica | Pippali Rangoon Creeper Giloy | Piperaceae Combretaceae | The roots are used to treat rheumatism. Stem decoction along with sugar is given to cure typhoid. Also used for cold, fever, heart problems. Anti-diabetic, jaundice. |
| 33 | Tinospora cordifolia | Giloy | Menispermaceae | |
| 34 | Tribulus terrestris | Gokhru | Zygophyllaceae | The fruits are useful in kidney diseases and urine discharge. It enhances athletic performance and for a wide range of health issues that may include heart and circulatory conditions and sexual issues. Abortifacient, jaundice. |
| 35 | Trichosanthes cucumerina | Snake guard | Cucurbitaceae | |
Abrus precatorius
Antigon leptopus
Asparagus racemosus
Aristolochia indica
Caesalpinia bonduc
Calamus tenuis
Capparis zeylanica
Cissus quadrangularis
Clitoria ternatea
Coccinea grandis
Cuscuta reflexa
Dioscorea bulbifera
Evolvulus sericeus

Ipomoea alba

Ipomea aquatica

Ipomoea caurica

Ipomoea carnea

Ipomoea coccinea

Ipomoea nil

Ipomoea obscura

Ipomoea quamoclit

Lathyrus aphaca

Merremia dissecta

Merremia hederacea
Mucuna pruriens
Mukia maderaspatana
Operculina turpethum
Oxystelma esculentum
Passiflora incarnata
Passiflora vitifolia
Pentatropis capensis
Pergularia daemia
Piper longum
Quisqualis indica
Tinospora cordifolia
Tribulus terrestris
REFERENCES