Medicinal and Aromatic Plants Diversity of Asteraceae in Uttarakhand

Vinod Kumar Bisht & Vineet Purohit

1Herbal Research & Development Institute, Gopeshwar - 246 401, Uttarakhand, India.
*E-mail: vksbisht@gmail.com; vksbisht@rediffmail.com

Abstract: Geographically Uttarakhand represents six eco-climatic regions from 300 m asl to 7817 m asl, and abode to a variety of medicinal and aromatic plants, and their products are being used by local communities from time immemorial. Asteraceae is the largest family of medicinal and aromatic plants in Uttarakhand. The species of the family are growing from low altitude of Tarai Bhabar to the alpine. There are annual, biennial or perennial herbs, under shrubs, shrubs. This paper includes the database on various aspects of medicinal plants of the family Asteraceae in the state. The database on various aspects includes species richness, genera richness, medicinal use and altitude for the different species of the family Asteraceae. “Nature and Science. 2010;8(3):121-128]. (ISSN: 1545-0740)

Key Words: asteraceae, diversity, medicinal and aromatic plants

Introduction

Uttarakhand lies between 28°53’24” and 31°27’50” N latitudes and 77°34’27” and 81°02’22” E longitude and covers an area of 53,483 Km². The state is divisible into four major geological formations: Siwalik (outer) Himalaya, Lesser (lower) Himalaya, Greater (main) Himalaya and Trans Himalaya with six eco-climatic regions: Sub-tropical (<1500 m), warm temperate (1500-2500 m), cool temperate (2500-3000 m), sub-alpine (3000-3500 m), alpine (3500-5500 m) and nival (>5500 m). Due to its rich forest cover, the state has great potential to serve as a model for conservation and development of herbal plants. Medicinal and aromatic plant species are widely distributed due to a variety of climatic factors and altitudinal variations coupled with varied ecological habitats. These plant species are basic ingredient of the ethno-botanical and traditional health care system.

Asteraceae or Compositae family is also known as daisy family, sunflower family or thistle family. This is the largest family of the flowering plants with more than 24000 - 30000 species and 1600 - 1700 genera (Funk et. al, 2005) worldwide and inhabit almost every environment and continent except Antarctica. In India the family is represented by 900 species under 167 genera. Asteraceae taxa can assume almost every life-form viz. annual, biennial or perennial herbs, undershrubs, shrubs, a few trees, some scramblers and aquatics. Some are succulent, whereas others are spiny and some have milky sap. Many perennial species are adapted to survive the cold, dry winter season by underground storage organs and producing annual stems in spring. The name Asteraceae is derived from the term Aster means composite and refers to the characteristic inflorescence – have flower heads composed of many small flowers, called florets, and are surrounded by bracts (Moreira & Munoz, 2007). The largest genera are Senecio (1,500 species), Vernonia (1,000 species), Cousinia (600 species) and Centaurea (600 species). The circumscription of the genera is often problematic and some of these have been frequently divided into minor subgroups. Asteraceae are cosmopolitan, but most common in the temperate regions and tropical mountains. Some of the plants in Asteraceae are medically important and are also commonly featured in medical and phytochemical journals. Many members of the family are grown as ornamental plants for their flowers.

Uttarakhand represents the reservoir of 85 species of the family Asteraceae, which are being used by the local people from time immemorial in traditional health care system. They have very vast and important knowledge about many plants and their uses in traditional system of medicine. However, the information about this valuable resource is scattered and even some of these resources are at the verge of extinction. Therefore, the present work is an effort towards the compilation and documentation of medicinal plants resources of Uttarakhand.

Material and Method

Present study was carried out in the Uttarakhand state and based on extensive and intensive literature surveys, carried out in different universities, institutions and organizations, different Ph.D. thesis, Research papers, short communications, articles and flora providing information on medicinal and aromatic plants were studied thoroughly and available information was recorded. Attempts were made to collect all the possible data of the region, therefore, some recently introduced plants have also been included. The data present in the current paper is based on the compilation of collections made by other authors. Description of the species stated with correct name, author citation, synonym, habit, vernacular name (local dialect), Hindi, Sanskrit, English names, uses, altitudinal range, flowering and fruiting time and subsequent author citations. Although, inclusion of vernacular, Hindi names does not look proper but has a immense value to different users. The use of plants varies from place to place. Many plants which have no specific use is known are yet regarded as medicinal herb by different authors.

It is now well understood that appropriate knowledge about plants of a given region is essential for the proper and effective utilization of these resources. The main objective of the study was to create the database on various

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aspects of medicinal and aromatic plants of Asteraceae family from Uttarakhand, so that it could provide necessary information about the present status of medicinal and aromatic plants of the family in the state.

**Results**

In the present study a total of 85 species of medicinal and aromatic plants with 54 genera of Asteraceae from Uttarakhand were recorded. Among them *Anaphalis*, *Artemisia*, *Chrysanthemum* and *Saussurea* (5 spp.) are the largest genera. Whereas others dominating genera are *Aster*, *Scenecio* and *Sonchus* (3 species), *Echinops* (2 species). Most of the plant species (76 spp.) are herbs, some are shrubs (5 spp.) and few (4 spp.) are under shrubs. These plant species are useful in traditional and ethnomedicobotany to treat different ailments such as asthma, diarrhoea, dysentery, cough, cold, inflammation, arthritis, rheumatism etc. by local inhabitant of the state.

**Conclusion**

Proper identification of the medicinal and aromatic plant has a vital role in the utilization of this natural wealth and conservation of biodiversity in the state. The future of this resource in Uttarakhand is at risk as they are often picked up from the wild, leaving little scope for their regeneration. Recently Rawat et al. (2001) listed 45 species (excluding Red Data Book) those need special attention for conservation. Undoubtedly, the resource needs to be harnessed for economic development, but simultaneously we have to conserve this resource for use on a sustainable basis.

In this context, it is of paramount importance that the herbal resource of Uttarakhand is scientifically identified, inventorised, documented and an exhaustive data base be prepared.

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**Correspondence to:**
Vinod kumar Bisht  
Herbal Research & Development Institute, Gopeshwar -246 401, Uttarakhand, India  
Cellular Ph. +91-94124 09856  
E-mail: vksbisht@gmail.com

**Authors:**

1. **Vinod Kumar Bisht**  
   Project Scientist (Botany)  
   Herbal Research & Development Institute, Gopeshwar, District – Chamoli – 246 401 Uttarakhand, India  
   E-mail: vksbisht@gmail.com  
   Mob. No. +91-94124 09856

2. **Vineet Purohit**  
   Research Scholar

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**Reference:**


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Acanthespernum hispidum DC.


Achillea millefolium


Ageratum conyzoides


Ageratum houstonianum Miller


Ainsliaea latifolia (D.Don) Schults- Bipinnatus


Ainsliaea apetala DC.


Artemisia absinthium


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http://www.sciencepub.net 123 marslandpress@gmail.com
Artemisia japonica

Aster ericoides

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Blumea lacerata (Burm.f.) DC.


Blumea lanceolaria (Roxb.) Druce

Syn: Conyza lanceolaria Roxb., Hr: Shrub, U: Wounds, Cuts, Fl. & Fr.: Feb - May


Calendula officinalis L.


Carpesium abrotanoides L.


Carthamus tinctorius L.


Centaurea cyanus L.


Centipeda minima (L.) A. Braun & Ascherson


Centratherum anthemoides (Wild) Kunze


Chrysanthemum cinerariaefolium Vis.

Hr: Herb, V: Pyrethrum, U: Guldawali, E: Daisy, U: Insecticide, A: 350-2500 m,
Chrysanthemum carinatum Schoube.

Chrysanthemum coronarium L.

Chrysanthemum indicum

Cichorium endivia L.

Cichorium intybus L.

Cirsium verutum
*Syn:* Cnicus verutus D. Don.

Cirsium vulgare (D. Don) Spreng.
*Syn:* Cnicus vulgaris D. Don.

Cosmos bipinnatus Cav.

Dahlia imperialis Roezl ex Hortigies

Echinops cornigerus DC.

Echinops echninatus Roxb.

Eclipta alba L.

Elephantopus scaber L.

Emilia sonchifolia (L.) DC.

Eupatorium adenosorum Spreng.

Galinsoga parviflora Cav.

Gerbera gossypina (Royle) G. Beauv.
**Helichrysum annuus L.**


**Helianthus tuberosus L.**


**Helichrysum bracteatum (Ventenat) Andrews**


**Inula cappa (Buch. – Ham. ex D.Don) DC.**


**Inula cuspidata (DC.) C. B. Clarke**


**Jurinea macrocephala Benth**


**Lactuca sativa L.**


**Laggera alata (D.Don) Schultz-Bipon. ex Oliver**


**Launaea asplenifolia (Willd.) Hook. f.**


http://www.sciencepub.net 126
Nature and Science, 2010

Solidago virgaurea


Solidago virgaurea DC.

Sonchus oleraceus L.

Sonchus asper (L.) Hill.

Sonchus brachyotus DC.

Sonchus oleraceus L.

Stevia rebaudiana (Bertoni) Hems.

Tanacetum longifolium Wall.

Tanacetum coronatum Wall.

Tragopogon gracilis D. Don.

Tridax procumbens L.

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Sphaeralcents indicus L.


Stevia rebaudiana (Bertoni) Hems.


Author Citation:

Synotis alatus (Wall. ex DC.) C. Jeff. & Y.L.Chen


Tanacetum longifolium Wall.


Tanacetum coronatum Wall.

Syn: T. corounatum Wall.

Taraxacum officinale Weber.


Triglochon procumbens L.


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127

marslandpress@gmail.com
Vernonia cinerea (L.) Lessing

Xanthium indicum Koenig

Common Abbreviation:
asl- Above sea level, Ht - Height, H - Hindi name, Syn - Synonym, V - Vernacular name, S - Sanskrit name, U – Uses, A – Altitude, Fl – Flowering, Fr – Fruiting.

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