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### Ethnobotanical Studies of Interior Area of Aligarh District (U.P.), India

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#### KEYWORDS

Aligarh district, ethnobotany, ethnomedicine, phytoremedy, Traditional use.

#### A B S T R A C T

From ancient times, the plants have been used as sources of medicines by the tribal or human being. However, information on the uses of plants medicine was lacking from many interior areas of Aligarh district. Visits were carried out in different areas for getting the information. The observation revealed that the local and rural communities use many plants in various common ailments like bronchitis, boil, tumor, cold and cough etc. in Aligarh district. These communities prepared polyherbal drugs either singly or in combination with other plant species. They have been using such preparations for a long time for human healthcare.

#### Introduction

Most of the village people are poor, so the rural people largely depend on the traditional herbal medicines prepared by practitioners. Types of practitioners are vaidh, kaviraj, hakim etc. They depend on various ethnomedicinal plants. They visit the field from village to village for collecting the ethnomedicinal plants weekly and use them in various diseases. Almost every village has either one or two vaidh or hakim. Mostly practitioners are not well educated but they are very experienced in their field. The main objects of the survey were to collect the ethnomedicinal information of plants from interior area of Aligarh district (U.P.).

#### Materials and Methods

The ethnobotanical informations were collected during regular field trips through interviews and discussions with herbal medicine practitioners locally called as 'Vaidhya', 'Hakim', 'Kabiraj' and other experienced old men. While noting the information, every care was taken to record the local name of plants, flowering & fruiting time, part used, method of drug preparation and their uses. The modes of application of the different plant species were different for the treatment of various common diseases. Plant species were identified by using relevant flora (Duthie, 1903-1929), (Bennet, 1987).

The ethnomedicinal use of the plants were compared with available Scientific Literatures (Amiri and Joharchi 2012), (Bhatt and Gaur, 1992), (929, 1973), (Hooker, 1875-1897), (Islam, 2000), (Katewa *et al.*, 2001), (Khanna, *et al.*, 1996), (Kumar and Chauhan, 2005), (Pandey and Kumar, 2006), (Saini, 1996).

### Results and Discussion

In the present study it is observed that the use of the plants is generally depended upon the availability of those plants near their villages. Analysis of the data reveals that the plant species are employed for the treatment of bronchitis, boil, tumor, cough and cold etc. The ethnomedicinal informations regarding treatment of various diseases have

been collected during the survey of Aligarh district (U.P.). It is presented here in tabular form (Table-1). 50 ethnomedicinal plant species belonging to 30 families and 47 genera are enumerated in the present work. 40 plant species and 10 plant species are used for single drug treatments and multidrug treatment respectively. All plant species have been arranged alphabetically with botanical name, family, local name, flowering & fruiting time, parts used, disease and mode of use. In the present study, out of 50 families, Amaranthaceae, Caesalpinaceae and Liliaceae are mostly used in the treatment of various diseases. Leaf constitute is the highest (24) of utilization followed by stem (13), seed (8), root (11), whole plant (7), flower (4) bulb (2) and fruit (2).

**Table.1** Result of field survey

Botanical name, family and local name	Fls / Frts Time	Part used	Disease	Preparation and mode of use
<i>Abrus precatorius</i> L. Fabaceae (Leguminosae) "Ghumch".	Aug-Sep/ Sep-oct	Leaf  Leaf  Root	Cold & cough  Bronchitis  Cold & cough	Fifteen to twenty leaves are crushed in water and warmed for some time to prepared decoction. Decoction is given to the patient in the case of cold & cough twice in a day. Leaf powder (1– 3 grams) is given to the patient of the bronchitis. Roots are crushed and squeezed to get the root extract. The root extract is useful to getting the relief in obstinate cough and cold.
<i>Acacia catechu</i> L. (Mimosaceae), "Cattha".	Jul-Aug/ Sep-Mar	Bark	cold & cough	Decoction or powder of Bark is used as a gargling solution.
<i>Acacia nilotica</i> L. (Mimosaceae), "Babul".	Jul-Oct/ Nov-Feb	Bark	Whooping cough	15-100 grams stem`s bark decoction is prepared in water with a small quantities of salt and jaggery (local name Gur, solidified sugarcane). One teaspoon of decoction is given twice a day in cold and whooping cough.
<i>Achyranthus aspera</i> L. (Amaranthaceae), "Chirchitta".	For most part of year	Whole  Leaf	Cold & cough  Boil, Tumor	One teaspoonful plant extract added with half amount of honey is given in cold & cough to patient. Leaf juice is made without admixture of water. This juice is being used as an ointment to treat boils and tumors.

<i>Adhatoda vesica</i> Nees. (Acanthaceae), “Piyabans”.	Oct-Jan/ Jan-Mar	Leaf & Flower	Bronchitis	Leaf or flower juice or extract (15-20 ml) are given to the patient in the case of bronchitis.
<i>Ageratum conyzoides</i> L. (Asteraceae); ‘Sarhand’	Jan-Mar/ Mar-Apr	Leaf	Boil	Lukewarm past prepared from leaves is applied as poultice on the boils for healing.
<i>Allium cepa</i> L. (Liliaceae), “Piyaj”.	Jun- Aug	Bulb	Tumor  Bronchitis  Cold & cough	Lukewarm pulp of the bulb is bandaged on tumors for getting relief. Boiled 3-5 crushed garlic cloves are given along with lukewarm milk daily at night in case of bronchitis. Bulb juice mixed with a little hing (dried latex of <i>Ferula assafoetida</i> ) is given orally in case of cold & cough.
<i>Allium sativum</i> L. (Liliaceae), “Lahsun”.	Jun- Aug	Bulb	Cold & cough	One bulb ground with 50 gram seed oil of arund ( <i>Ricinus cummunis</i> ) is boiled. The oil is massaged on the chest to cure cold & cough.
<i>Aloe vera</i> (Linn.)Burm.f. (Liliaceae), “Ghinkwar”.	End of winter	Leaf	Tumor	A poultice prepared from the leaves is applied externally on tumors for getting relief.
<i>Alstonia scholaris</i> L. (Apocynaceae), “Chitwan”.	Winter	Latex  Leaf	Boil  Boil	Stem latex is used externally over the boils twice a day for three days. The fresh leaf past with small amount of honey is applied on boil for whole night.
<i>Amaranthus spinosus</i> L. (Amaranthaceae), “Kantachouli”.	Aug-Jan	Leaf & Root Stem	Boil,  Boil	Past prepared by leaves and roots are applied externally as poultice on boils. The past prepared by ash of dry stem and some amount of lime is applied on the mature boil for bursting soon.
<i>Amaranthus viridis</i> Hook. (Amaranthaceae), “Jangali Chouli”.	July-Feb	Root	Boil	Root paste is applied externally on the boils for getting relief in pain.
<i>Argemone mexicana</i> L. (Papaveraceae), “Pili Kateli”.	Oct-Apr/ Apr-May	Whole  Seed	Whooping cough  Boil	Whole plant crushed and ground in water is filtered. The filtrate is boiled and again with clean cloth. Only two teaspoonful brownish decoction is given once a day for three to four days for the treatment of whooping cough. Seed oil is applied externally on boil for getting relief.
<i>Azadirachta indica</i> A. Juss. (Meliaceae), “Neem”.	Mar-May/ May-Jun	Leaf	Boil, Tumor	Leaf extract is applied externally on the boil and tumor for curing and healing soon.
<i>Bacopa monnieri</i> L. (Scrophuliaceae), “Vermin”.	Aug-Oct/ Oct-Nov	Whole	Bronchitis	Lukewarm juice of <i>Bacopa monnieri</i> is applied or massaged on the chest of the children in bronchitis
<i>Bauhinia purpurea</i> L. (Caesalpiniaceae), “Kachnar”.	Nov-Feb/ Mar-Apr	Root  Bark	cold & cough  Boil.	About 10 ml root decoction is given along with one glass of lukewarm water twice a day for 5–7 days in case of cold & cough. Bark decoction mixed with gur (jeggery) is lopped on the boils and wounds to wash and

				heal.
<b><i>Bryophyllum pinnatum</i></b> Lamk. (Crassulaceae), “Zakhmhayat”.		Leaf	Boil, Tumor	Lukewarm leaf past is applied externally on the boils and tumors of the body.
<b><i>Butea monosperma</i></b> Lamk. (Fabaceae), “Dhak”.	Mar-May	Leaf	Boil.	Leaf juice mixed with curd and a pinch of haldi powder (turmeric powder) is applied externally on the boil.
		Stem	Bronchitis	The decoction prepared form shoot is taken in the case of bronchitis.
<b><i>Carissa spinarum</i></b> Hook. (Apocynaceae), “Karaunda”.	Nov-Dec/ Dec-Feb	Leaf	Whooping cough.	One teaspoonful of leaves extract is given in whooping cough with honey twice a day.
<b><i>Cleome viscosa</i></b> L. (Capparidaceae), “Hulhul”	Jul-Sep/ Sep-Oct	Leaf	Boil.	Leaf past is applied externally on boils to prevent pus formation.
<b><i>Coriandrum sativum</i></b> L. (Apiaceae), “Dhania”.	Jan-Mar	Whole	Cold	Plant is ground in water of rice is given to the patient thrice a day for three to four days. Two to three teaspoonful seeds are boiled in half liter of water with adding some sugar according to test until 100 ml remains. It is given to patient in cold.
		Seed	Cold	
<b><i>Curcuma longa</i></b> L, (Zingiberaceae), “Haldi”.	-	Stem	Cough & Bronchitis.	One spoonful juice obtained from the rhizome mixed with equal amount of honey is given orally twice a day for a long time.
<b><i>Datura metel</i></b> L. (Solanaceae), “Datura”.	Dec-Jun	Leaf	Boil, Tumor	Luke warm leaves are bandaged on the boils and ulcers.
<b><i>Eclipta prostrata</i></b> L. (Asteraceae), “Kala Bhangra”.	Most part of year	Leaf	Cough	Leaf extract or juice (10 ml) mixed with equal amount of honey are given to orally early in the morning for 3 days.
<b><i>Eucalyptus glabulus</i></b> Labill. (Myrtaceae), “Safeda”.	May–Jun	Leaf	Bronchitis.	Leaves are boiled in water and inhaled as a respiratory antiseptic in bronchitis.
<b><i>Evolvulus alsinoides</i></b> L. (Convolvulaceae), “Vishnukrantha”.	Aug-Oct/ Oct-Nov	Leaf	Bronchitis.	Leaves are used as cigarettes in bronchitis for getting the relief.
<b><i>Ficus religiosa</i></b> L. (Moraceae), “Pipal”.	Mar-May	Bark	Whooping cough.	Bark decoction (50–100 ml) is given orally thrice a day for curing whooping cough.
<b><i>Holoptelea integrifolia</i></b> Hook. (Ulmaceae), “Papri”.	Feb.-Apr	Seed	Boil, Tumor	Seed kernels are fried into oil of <i>Sesamum indicum</i> . The filtered oil is applied externally on the boils and tumors.
<b><i>Leucas cephalotus</i></b> Hook. (Lamiaceae), “Gubha”.	Aug-Oct/ Oct-Nov	Flower	Cold & cough	Syrup is prepared from Flowers. It is given as a domestic remedy for cold & cough.
<b><i>Linum usitatissimum</i></b> L. (Linaceae), “Alsi”.	Jan-Feb/ Feb-Mar	Seed	Cold & cough	Seeds powder mixed with honey is given with lukewarm water in cold & cough.
<b><i>Nerium indicum</i></b> Hook. (Apocynaceae), “Kaner”	Jun-Jul/ Jul-Sep	Latex	Boil.	Stem latex is applied externally over the boil twice a day for about ten days.
<b><i>Ocimum sanctum</i></b> L. Mant. (Lamiaceae),	Feb-May	Flower	Cold & cough.	Lukewarm flowers extract with honey, ginger (rhizome of <i>Zingiber officinale</i> ) and onion

“Tulsi”.		Leaf Leaf	Bronchitis cold & cough. Whooping cough.	juice ( <i>Allium cepa</i> ) are being used in common cold & cough. One cup of tea prepared by adding the 15-25 leaves is given thrice in a day in case of bronchitis and cold & cough. Leaf juice is mixed with honey and is given orally in whooping cough.
<i>Opuntia delleni</i> Hook. (Cactaceae), “Nagphani”.	Mar-Apr	Stem	Boil	Lukewarm pulp of the stem is applied externally on boils.
<i>Phaseolus mungo</i> L. (Fabaceae), ”Urd”.	Jan-Feb/ Mar-Apr	Seed	Boil. Boil, Tumor	About 4 gram ripe seeds are crushed and mixed with equal amount of guana of pigeon and applied over the boil for two days in night just before going to bed. Seed powder is rubbed into scarifications over tumors and abscesses to promote exudation.
<i>Phyla nudiflora</i> L. (Verbenaceae); “Bukkan”,	Mar-Sep	Whole	Boil. Tumor	Paste or poultice of fresh plant is applied externally to boils and tumor.
<i>Plumbago zeylanica</i> L. (Plumbaginaceae), “Chirchitta”.	Oct-Jan/ Jan-Feb	Leaf Whole	Boil, Boil.	Lukewarm leaf is tied on the boils by cotton cloth to reduce them soon. Plant paste is applied as poultice on mature boils and tumors. They are busted and come out.
<i>Pongamia pinnata</i> (L.) Pierre. Syn. <i>Cytisus pinnatus</i> L. (Fabaceae), “Papri”.	Mar-May/ May-Jun	Seed	Whooping cough	Seed powder (1–3 grams) is given along with lukewarm milk in the case of whooping cough.
<i>Rungia repens</i> (L.) Nees. (Acanthaceae),	Oct-Jan	Whole	Cough.	Whole dried plant is crushed and given in doses of 4–12 gram along with lukewarm tea in cough.
<i>Salvadora persica</i> L. (Salvadoraceae), “Pilu”.	Nov-Feb/ Feb-Mar	Leaf	Cough, Tumor, Bronchitis.	Leaf decoction (50 –100 ml) is given in cough. Leaf past is applied externally as a poultice on tumors. Leaf juice (60–80 ml) is given orally in the case of bronchitis. The smoke of the fruit is also inhale.
<i>Solanum xanthocarpum</i> Schrad. (Solanaceae), “Kateri”.	May-Aug/ Aug-Sep	Flower Fruit, Root	Whooping cough Cold & cough. Cough.	Half gram of dried flower powder is mixed with honey and licked to relieve whooping cough Power of dried fruit mixed with honey is given to children in the case of cold & cough. Root decoction mixed with long pepper (flowering vine of <i>Piper longum</i> , Piperaceae) and honey is given orally in cough.
<i>Tamarindus indica</i> L. (Caesalpiniaceae), “Imli”.	Jul-Sep/ Sep-Nov	Seed	Cold & cough	Seed past is applied to forehead in the case of cold & cough for getting the relief.
<i>Terminalia arjuna</i> Roxb. (Combretaceae), “Arjun”.	May-Jun/ Jul-Aug	Bark	Boil	Bark powder (4 gram) mixed with the leaf juice (10 ml) of <i>Adhatoda vesica</i> , ghee and honey is given twice a day for about two

		Leaf	Boil	weeks. Four gram leaf extract is given orally thrice in a day for about two weeks.
<i>Thevatia peruviana</i> (Pers.) Merr., (Apocynaceae), "Pili Kanner".	Mar-Apr/ Apr-May	Root	Tumor	Root past is applied as poultice externally on tumors and also bandaged by the cotton cloths.
<i>Tribulus terrestris</i> L. (Zygophyllaceae), "Gokhru".	Jul-Sep/ Sep-Nov	Fruit	Bronchitis	Fruit powder (3– 6 gram) or root decoction is given twice a day in the cases of bronchitis.
<i>Trigonella foenum–graecum</i> L. (Caesalpiniaceae), "Methi".	Jan-Mar/ Feb-Mar	Seed	Boil, Tumor	Seed past is applied externally as a poultice on the boils and tumor for healing.
<i>Triumfetta rhomboidea</i> Jacq. (Tiliaceae), "Kasni".	Aug-Sep/ Sep-Oct	Root	Boil, Tumor	Root extract mixed with the beet (feaces) of pigeons is applied on the boils and tumors for bursting soon.
		Root	Bronchitis	Root extract is boiled and strained. The filtrate is given orally to the patient in bronchitis.
		Stem & leaf	Boil, Tumor	Pounded leaves and stem are being used externally as a poultice on boils and tumors.
<i>Vernonia cinerea</i> L. (Asteraceae), "Phulni".	Sep-Feb/ Feb-Mar	Root	Cold & cough	Root juice (10–20 ml) is given orally to cure cold and cough twice a day for about two week.
<i>Xanthium strumarium</i> L. (Asteraceae), "Bhangra".	May-Mar	Root	Boil, Tumor	Root extract is applied externally on the boils and tumors for getting the relief in pain and to heal.
<i>Zingiber officinale</i> L. (Zingiberaceae), "Adarak".	–	Root	Cough	Lukewarm little root past mixed either with honey or with ghee (clarified butter) is made into pills, which is a good remedy against cough. The pills (3-4 gram) are given for about four days.
		Stem	Boil	Rhizome (stem) past mixed with mustard oil is applied externally on boils for getting relief.
<i>Zizyphus rotundifolia</i> Lamk. (Rhamnaceae), "Jhar Ber".	Jul-Sep/ Sep-Dec	Leaf	cold & cough	Dried leaves are burnt and are inhaled in cold & cough.

## Conclusion

The present study helped list out various ethnomedicinal plants. The paper provided here can be utilized to further studies on conservation and cultivation of ethnomedicinal plants of interior area of Aligarh district (U.P.). The youth should also be encouraged to learn the traditional medicinal knowledge to preserve it from being lost with the older generation. There is

a need to take necessary steps for the conservation of plants and also for investigation chemically active principles and pharmaceuticals and medicinal evaluations.

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