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Ethno-medicinal plant species used to treat leucorrhoea by traditional practitioners of Vijayapur (Bijapur) district of Karnataka, India

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Abstract
Medicinal plants continue to be an important therapeutic aid for alleviating the ailments of humankind. An ethno-botanical survey of Vijayapur district of Karnataka comprising five tehsils was conducted during February 2014 to June 2016. The purpose of this survey was to document the traditional use of medicinal plants to treat leucorrhoea. Leucorrhoea an excessive discharge of a white, sticky, foul-smelling material from the vagina is called leucorrhoea. This common problem may occur due to unhygienic conditions, infection of the genital tract, or impaired immune function. Most of the people do not approach doctors due to hesitation, lack of knowledge, high cost of medicines and different instrumental treatments, etc. Traditional herbal medicines are very cheap and easily available. The present study was initiated with an aim to identify medicinal plants resources from traditional practitioners of Vijayapur district to treat leucorrhoea. There are about 12 species of angiosperms belonging to 12 genera and 09 families were found to be used treat leucorrhoea.

Keywords: traditional herbal medicine, ethno-botanist, leucorrhoea, Vijayapur, Karnataka, India

Introduction
Human beings have always had resource to nature for health and life. Practice of indigenous medicines is one of the advancing frontiers of medical science. From time immemorial plants have played a significant role as curative and protective agents; at present there are many valuable and life-saving medicines obtained from plants. Leucorrhoea an excessive discharge of a white, sticky, foul-smelling material from the vagina is called leucorrhoea. This common problem may occur due to unhygienic conditions, infection of the genital tract, or impaired immune function. Most of the people do not approach doctors due to hesitation, lack of knowledge, high cost of medicines and different instrumental treatments, etc. Traditional herbal medicines are very cheap and easily available. The present study was initiated with an aim to identify medicinal plants resources from traditional practitioners of Vijayapur district to treat leucorrhoea.

Study Area
The Vijayapur district of Karnataka state is located between north latitude 16°.01', 17°.45', and east longitude 75°.03', 76°.29'. The district has its border with Belgaum, Bagalkot, Raichur, Gulbarga district and to north, Sholapur district of Maharashtra state. Vijyapur district is plain Deccan plateau, which is from 365-610 met height above sea level. This region is slope towards west to east. The river Doni, Krishna, Bheema, and their tributaries are flows according to the slope. The total area of Vijayapur district is 10,541 sq kms. There are five talukas of Vijayapur district i.e., Vijayapur, Muddebihaal, Sindagi, Basavanbagevaadi and Indi. Bordered by the Bheema River in the north and the River Krishna in the south. The district consists of the dry and arid tract of the Deccan Plateau. The temperature varies between 42°c during summer and 15°c during winter season respectively. In May mean maximum temperature is 40°c. The climate of this region is arid, tropical and steppe type. The soil of Vijayapur district area is rich in content of basalt rock, magnetite, magnesium, aluminium and iron oxide. The Vijayapur district receives normal rainfall 578.0 mm and the vegetation of this region is mainly dry and deciduous and may broadly as vegetation on plains. The natural vegetation near Alamatti Dam area is like dry and hot having rich flora. Many local traditional practitioners collect the plants from this area to cure the diseases.

Material and Methods
Ethno botanical survey during February 2014 to April 2017 carried out in Vijayapur district. For this, frequent field trips were made to 25 villages belonging to all 5 tehsils of the district. Twentyfive traditional practitioners (23 men and 2 women) Data and information recorded in the standard questionnaire. Prior Informed consent (PIC). Collected data and information include, Vernacular name of traditionally used medicinal plants, part used, method of preparation and dosage. Medicinal plant species were photographed in the field. Plant specimens were identified consulting with experts, by referring Flora of Gulbarga District [14], three volumes of the Flora of Presidency of Madras [1]. The voucher specimens were stored at the herbarium centre, Department of post graduate studies and Research in Botany, Gulbarga University, and Kalaburagi.

Result and Discussion
In the present account, 12 species of angiosperms belonging to 12 genera and 09 families were reported to treat leucorrhoea. The predominant families are malvaceae and Asteraceae with 2 species. Data obtained from the survey is compiled in Table 1. All plant species scientific name, family, local name, Habit, Part used and mode of administration are provided. Different plant parts were used to treat leucorrhoea. Among these leaves were used (66.66%), followed by fruit (16.66%), whole plant (8.33%),

and seeds (8.33%) decreasing order. Review of related literature reveals that medicinal plants used by the traditional practitioners of this area are not documented on other areas. For Instance. *Amaranthus lividus*, *Boerhaavia repens*, *Cynodon dactylon*, *Ficus religiosa*, *Justicia adhatoda*, *Lagenaria siceraria*, *Phyllanthus emblica*, *Terminalia arjuna*, *Zizyphus mauritiana are used for* leucorrhoea [12]. *Asparagus racemosus* and *Moringa oleifera* are used for leucorrhoea [10]. Review of related literature also reveals that medicinal plants used by the traditional practitioners of this area are also recommended on other areas for same purpose, *Acacia ferruginea*, *Hibiscus rosa-sinensis and Terminalia chebula* [15]. Among the medicinal plant species reported, *Caesalpinia bunducella* (L.)Roxb, *Hibiscus rosa-sinensis* L.were the most effective species against the leucorrhoea as prescribed by 18 traditional practitioners (72%). In Karnataka, ethno-botanical studies on medicinal plants were conducted in Chikmagalur, Tumkur [16], Kodagu [6], Uttar Kannada [4], Bidar [11], Chitradurga [5], Shimoga [13], Gulbarga [2], Bhadra wild life sanctuary in Karnataka [9] Bellary [15] and Bijapur [7, 8] districts. However ethnobotanical study in Vijayapur (Bijapur) district has not been reported. Most of the people dependent on traditional herbal medicine because availability of effective drug plants. Hence, these plants can be taken up for further pharmacological and clinical studies.

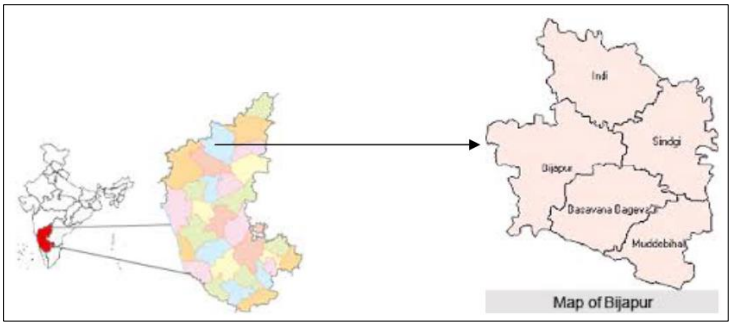

Fig 1: Map of the study area

Table 1: Medicinal plants used to treat leucorrhoea by traditional practitioners of vijayapur (Bijapur) district

Scientific name	Family	Local/ Vern Name	Habit	Part used	Mode of administration
Abutilon indicum (L.)Sweet HGUG-5014	Malvaceae	Turubi gida	Shrub	Leaves	Leaves+7 Red Sorghum seeds are ground and made into tablets and administered to take a tablet once in a day for 7 days
Acacia ferruginea DC HGUG-5015	Fabaceaea	Banni gida	Tree	Leaves	Fist of leaves ground and administered to drink with curd in empty stomach for 7 days
Aloe vera (L.)Burm.f HGUG-5025	Xanthorrhoeaceae	Loulasara	Herb	Leaves	1) Pulp of leaves+ Candy sugar+ Coconut water +Poppy seeds (Khus khus)+200 ml of curd +white hibiscus flowers are taken, made it into juice and administered to drink for 21 days with empty stomach 2) Candy sugar+ Cardamom seeds+ Cumin are taken and made its powder, stored in tin. Pulp of leaves+ pinch of stored powder is administered to consume and swallow orally until cure
Caesalpinia bunducella (L.)Roxb HGUG-5041	Fabaceae	Gajaga	Shrub	1)Fruit 2) Leaves	1) Endocarp of fruit is boiled with goat milk and add sugar, administered to drink for 3 days 2) Leaves boiled with curd sieved and taken orally twice a day for 5 days
Cocculus hirsutus (L.)Diels HGUG-5056	Menispermaceae	Dangadi balli	Herb	Leaves	Fist of leaves are administered to eat once in a day for 7 days
Enicostemma axillare(Lam.).Raynal HGUG-5065	Gentinaceae	Biliranjaka	Herb	Leaves	A handful of leaves are boiled in 1 litre of milk until it reduces to ½ litres. Stored in a glass bottle. Administered to drink 1 cup for 21 days
Glossocardia bosvallia (L.f.) DC. HGUG-5070	Asteraceae	Kadu sabbasagi	Herb	Whole plant	Fist of stems and leaves+1 spoonful candy sugar+ 1/2 spoon poppy seeds [kasakasi]are administered to eat for 5 days early in the morning
Hibiscus rosa-sinensis L. HGUG-5072	Malvaceae	Dasaval gida	Shrub	Flower	Dried flowers +candy sugar+ cardamom powder is made, a pinch of powder is administered take once in a day, for 7 days
Ipomoea obscura (L.)Ker- Gawl. HGUG-5073	Convolvulaceae	Mooguti balli	Climber	Leaves	Leaves+ Ficus religiosa stem bark ground and made tablet and administered to take 1 tablet once in a day for 10 days
Ocimum basilicum L. HGUG-5083	Lamiaceae	Kaama kasturi	Herb	Seeds	Powder of seeds + Seeds of *Terminalia chebula* powder are mixed. Pinch of powder is administered to take, once in a day, orally for 21 days
Terminalia chebula Retz HGUG-5111	Combretaceae	Aralekaayi	Tree	Fruit	Powder of fruits + Candy sugar are administered to eat with honey twice in a day for 5 days
Tridax procumbens L. HGUG-5117	Asteraceae	Tikki Kasa, Sonta muruka,	Herb	Leaves	1 cup of juice of leaves is administered to drink once in a day with empty stomach for 1 month

Caesalpinia bunducella

Enicostemma axillare

Glossocardia bosvallia

Hibiscus rosa-sinensis

Ipomoea obscura

Ocimum basilicum

Conclusions

An ethno-botanical survey of Vijayapur district comprising five tehsils was conducted during February 2014 to April 2017. The main purpose of this survey was to document the traditional use of medicinal plants to treat leucorrhoea in vijayapur district. 06 species belonging to 05 genera and 05 families were found to be used to treat asthma. The scientific name, family, local name, habit along with part used and mode of their administration are provided. This traditional knowledge can transfer from one generation to generation. The study also suggested that the present information on leucchorea use of medicinal plant species by the traditional practitioners of Vijayapur district may be used for phytochemical and pharmacological research in future for the development of new sources of drugs.

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