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Neutraceutical Herbs of Figwort (Snapdragon) Family in North Eastern Terai of Uttar Pradesh, India.

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ABSTRACT

The Scrophulariaceae (Figwort or Snapdragon Family) is a large family, having about 220 genera and around 3000 species. The family has its greatest diversity in India, including North Eastern UP. The members of this family are growing throughout the Gorakhpur, Tinkonia and Bangai forests with adjoining villages of UP. The study was carried out during September 2012 to December 2013 to explore the area. A total of nine species having neutraceutical values were identified with their taxonomy and medicinal uses. Density, Frequency of a Species (%) in both the forest is graphically represented and diseases cured by using plants of Scrophulariaceae by Bantaniya and Musdhar tribes have been also mentioned.

Keywords: Scrophulariaceae, Nutraceutical value, Density, Frequency

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INTRODUCTION

Scrophulariaceae, the figwort family of flowering plants, one of the 26th in order Lamiales, having 65 genera and 1,700 species, distributed worldwide [1]. The family is characterized by bisexual flowers with tubular corollas (fused petals) which are bilaterally symmetrical (two-lipped) and have four stamens in most, two of which are usually shorter than the other two [2]. The pistil is superior (i.e., positioned above the attachment point of the other flower parts) and usually two-celled [3].

Neutraceutical; a term combining the words 'nutrition' and 'pharmaceutical' is a food or food product that provides health and medical benefits including the prevention and treatment of disease [4]. The use of neutraceutical as an attempt to accomplish desirable therapeutic outcomes with reduced side effects as compared with other therapeutic agents has met with great success [5]. In our study area, most rural inhabitants depend upon wild edible plants to meet their additional food requirements [6, 7, and 8]. Sometimes the nutritional value of traditional wild plants is higher than several known common plants, the present work deals with density (Crude Density), frequency of a species (%) and diseases cured by Bantaniya and Musdhar tribes resided in Tinkonia and Bangai forests with adjoining villages in Gorakhpur and surrounding areas of Uttar Pradesh by using neutraceuticals of Scrophulariaceae plants[9].

METHODOLOGY

Survey was conducted on different areas of north eastern Terai region of Uttar Pradesh and collected plants were identified with the help of [10-12], of available literature and confirmed by Herbarium Department of Botany DDU Gorakhpur, University Gorakhpur and Herbarium of National Botanical Research Institute, Lucknow[13, 14]. Medicinal uses of collected plants were then crosschecked from relevant literature [15-18]. Graphical representation of density, frequency of a species (%) [19] and diseases cured are mentioned.

Density = The numerical strength of a species in relation to a definite unit space is called its density.

Crude Density = The crude density refers to the number of individual of a particular species per unit area.

Crude Density = $\frac{\text{No. of individuals of a particular sp.}}{\text{Per unit area}}$

Frequency = $\frac{\text{Total no. of quadrates in which the sp. Occur}}{\text{Total no. of quadrate studied}} \times 100$

Frequency of a Species (%) = $\frac{\text{Total no. of hits the sp. Secured}}{\text{Total no. of hits aid}} \times 100$

RESULTS AND DISCUSSION

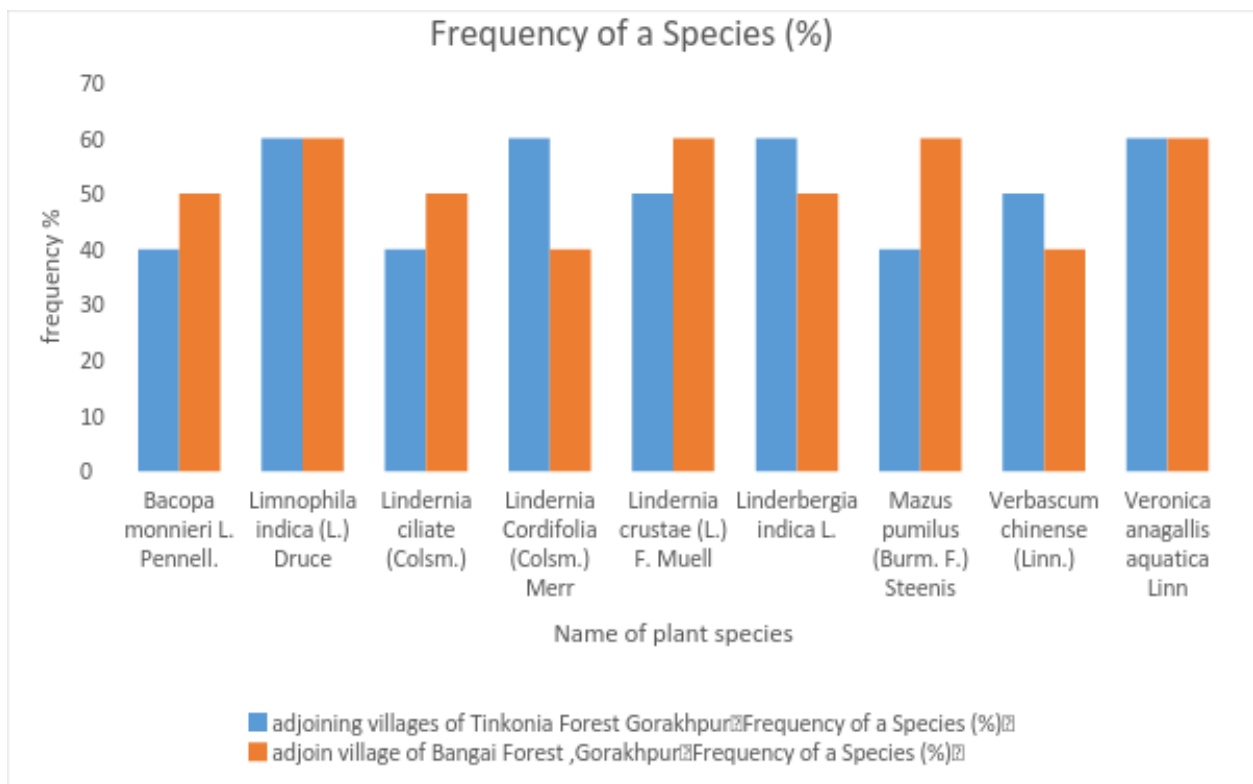
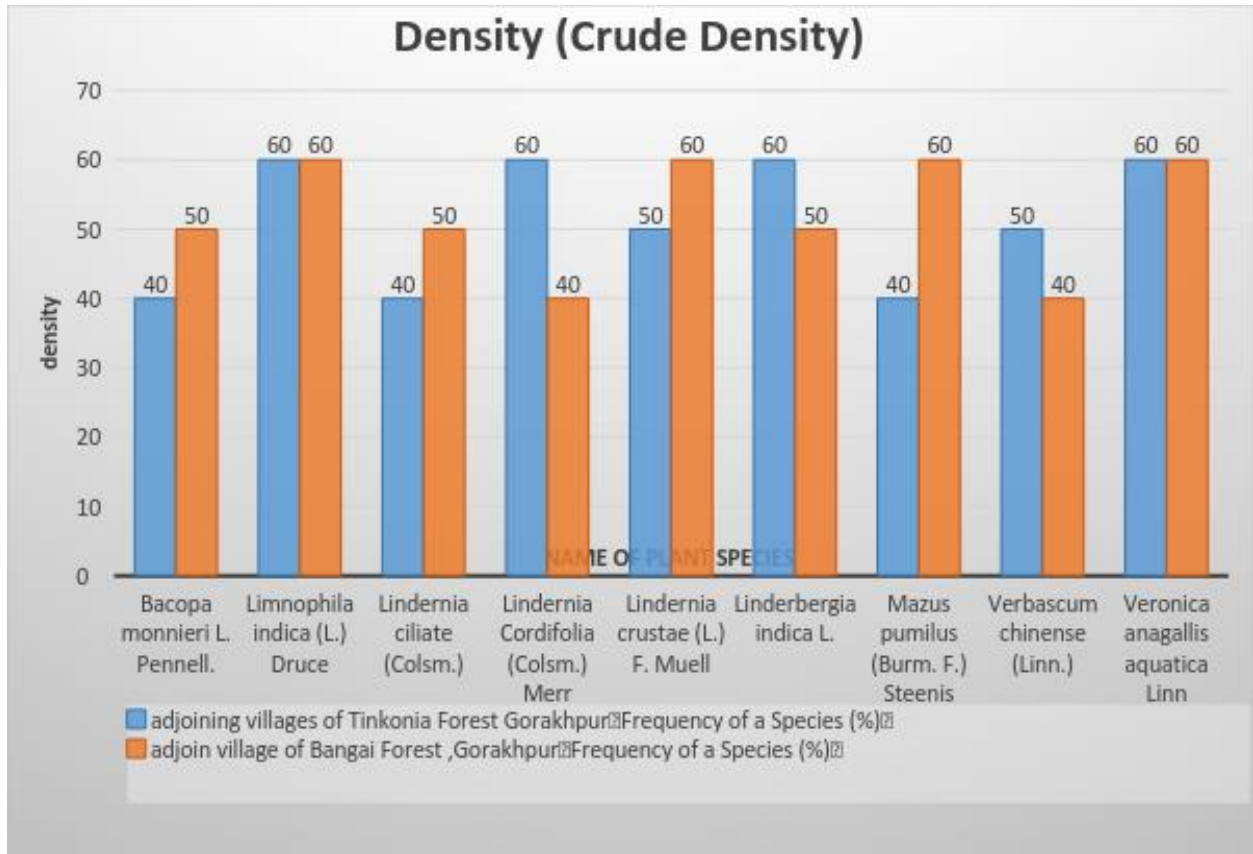
Neutraceutical herbs were collected from the study area Out of them, 09 species of Scrophulariaceae family with their neutraceutical values have been described in the present paper giving their botanical names, vernacular name, description, flowering – fruiting time and uses by tribal's are mentioned in the table -1. [20].

Table- 1 Plants used by Bantaniya and Musdhar tribes as Neutraceuticals.

Reference	Adjoin village of Bangai Forest ,Gorakhpur Frequency of a Species (%)	Adjoin village of Bangai Forest ,Gorakhpur Density (Crude Density)	Adjoining villages of Tinkonia Forest Gorakhpur Frequency of a Species (%)	Adjoining villages of Tinkonia Forest Gorakh -pur Density (Crude Density)	Uses	Flowering -Fruiting time	Description	Local name	Botanical name	S.no
[23]	50	2.4	40	1.8	Plant extract is given orally as diuretic, cardiac tonic and memory enhancer. Extract used especially in thinning and falling hairs.	Jul.-Dec	Perennial herb	Brahmi	<i>Bacopa monnieri</i> L. Pennell.	1
[23]	60	2.8	60	3.2	The plant is used against pestilent fever, dysentery, and in elephantiasis. The extract of the plant is rubbed over the body in pestilent fever. It is given internally in dysentery in combination with ginger, cumin.	Sep-Feb	Annual	Kutrawa	<i>Limnophila indica</i> (L.) Druce	2
[24]	50	2.6	40	2.2	Leaves used in gonorrhoea.	Jul-Dec	Terrestrial, annual, tufted, erect		<i>Lindernia ciliate</i> (Colsm.)	3
[25]	40	2.4	60	3.8	Leaves used for gonorrhoea.	Sep-Feb	Perennial herb		<i>Lindernia Cordifolia</i> (Colsm.) Merr.	4
[26]	60	4.2	50	2.2	Used in dysentery & ringworm.	Aug-Oct.	Annual	Kasidorina	<i>Lindernia crustae</i> (L.) F. Muell	5
[27]	50	2.8	60	4.2	Plant extract is given in chronic bronchitis. Paste in combination with coriander is applied to skin eruptions.	May- Jun	annual, small, erect herb	Basanti.	<i>Linderbergia indica</i> L.	6



[28]	60	2.6	40	2.2	Young leaves aperient, febrifuge and tonic. The extract of the plant is used in the treatment of typhoid.	May- Oct	Annual		<i>Mazus pumilus</i> (Burm. F.) Steenis	7
[23]	40	3.8	50	2.6	Leaf extract is used in diarrhea and dysentery	Feb-May	Erect branched		<i>Verbascum chinense</i> (Linn.)	8
[23]	60	1.8	60	4.2	Whole plant is useful in stomach disorders, leaves are applied on wounds, in scurvy, impurity of the blood; root and the leaves are alterative appetizer and diuretic.	Nov-Apr	perennial	Sadeviya	<i>Veronica anagallis aquatica</i> Linn	9



Since ancient times traditional use of plants by human being for various purposes found in ancient literature. The World Health Organization estimates that 80% of the people in developing world still rely on

traditional medicine. India is endowed with an estimated 47,000 species of plants, of these around 8000 plants are known to have medicinal properties. Tribal people use aquatic plants for food, medicine, fodder, socio-cultural, spiritual and for other their day to day requirements but the people of urban areas lack this knowledge and use maximum of allopath [29]. There are many diseases which are curable by our traditional knowledge in spite of modern medicine. The tribal's use these genera as their general utility like food, fodder, medicine etc. Ethnobotanical data shows that most of the members of the family have great medicinal value and are being used since ages for the cure of various human ailments [30]. During this work, it was realized that very little attention has so far been paid to the study of this important family. In this region and there is a dearth of literature on this subject. Thus there is a need for the revision of this family.

CONCLUSION

Neutraceutical herbs are considered to be a good source of dietary supplement on account of carbohydrates, proteins, fats, oils etc. Out of the huge numbers of herbs hardly few types of herbs are consumed by the common people. Very recently, world -wide attention has been drawn towards the lesser-known or under-utilized herbs, widely consumed by the tribal communities, which additionally provide health security. These plants are integral part of their diet as they get these plants in their immediate surroundings without any investment. Consumption of such valuable collected herbs should be encouraged through awareness so that larger section of population could include these vegetables in their dietary menu to get immunity from different kinds of diseases automatically. The main objectives of this work will be detailed study on the Neutraceutical value and medicinal aspects of the Figwort or Snapdragon Family in North eastern Terai region of UP.

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