RESEARCH PAPER	Botany	Volume : 4 Issue : 7 July 2014 ISSN - 2249-555X	
ALGOLOGI REALING	More Food Legumes		
KEYWORDS	Underutilized and neglected legumes, malnutrition		
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ABSTRACT Burden on traditional food sources makes it necessary to search for new nutritious plant food sources. Leg- umes are predominantly used for their protein content and this makes them the food of choice in malnour- ished area. For exploring more such legumes investigations were carried out in north east terai region of U.P. Survey			

umes are predominantly used for their protein content and this makes them the food of choice in malnourished area. For exploring more such legumes investigations were carried out in north east terai region of U.P. Survey revealed fifteen legume plants of immense importance. These plants belong to tree, shrub and herb category and were used as vegetables, spices and dals. Consumption of these plants will reduce the danger of their extinction and alleviate the economic status of local people.

INTRODUCTION

Growing world population and dearth of production have pushed the majority of population towards hunger. Recent FAO findings state that in 2011-2013, one in every eight persons suffers from chronic hunger. In the same period as many as 842 million people in developing regions suffered from chronic hunger (FAO, 2013). To feed the millions requires new sources of food. Researchers all over the world are engage in search of such new resources that can promise the food for hungry and can tolerate the diverse environmental conditions across the world(Pasiecznik et.al,2012; Oselebe et. al,2013).Several scientific studies on new plant sources have promised the extension of the list of edibles.(Jain,2010; Vadivel and Janardhanan,2000;Rajaram and Janardhanan ,1991).

FAO report indicates that price-rise shift the people towards cheaper and less nutritious food and plunged them into malnutrition. To combat malnutrition and hunger simultaneously new sources of high nutritional quality especially of proteins are required. In this context legume provide high quality of vegetarian proteins. Legumes belong to family Fabaceae and represent the largest protein source for vegetarians. Due to their high protein content several legumes have been overexploited and now they cannot cope with the emerging demand.(Ali and Kumar,2000).Therefore to check the protein energy malnutrition and to feed millions with nutritious diet ,It is necessary to introduce new legume sources. Several underutilized plants are used as food by the ethnic people of the north eastern region of UP(Srivastava, 2013). However less information is available about the ethnic consumption of legumes .

The objective of current study is to explore more such legume resources to provide safe, nutritious and cheap food for undernourished and hunger population. This investigation deals with the identification, documentation and ethnobotanical exploration of the underutilized and neglected legumes consumed by the ethnic people of north eastern terai region of UP. The area covers eleven district of UP with subtropical climate.

MATERIALS AND METHODS

Surveys were carried out in different regions of the study area at regular interval to collect plant specimens. The collected specimens were preserved by herbarium technique. The herbarium sheets were identified with the help of experts available in the Department of Botany, DDU Gorakhpur University, Gorakhpur and from different Floras (Flora of Gorakhpurensis by T.N. Srivastava, 1976; Flora of Duthie ,1960; Flora by Singh,1969; Flora by Siddique,1969; Flora by Kirtikar and Basu, 1933). Photographs of plant samples were also taken for further details. Informations about wild edibles were collected and their mode of use were also documented during field visits. To collect authentic information older peoples were interviewed. All the information was documented through a questionnaire (Kala, 2000). Phenology of the identified plants was also reported.

OBSERVATIONS AND DISCUSSION

Investigation in survey areas revealed fifteen legume plants of immense food value. These fifteen plants belong to all three category of legumes viz. Papilionaceae, Caesalpiniaceae and Mimosaceae. Ten plants belong to Papilionaceae, three belong to Caesalpiniaceae and two belong to Mimosaceae. Information about these fifteen plants were documented and presented in table 1 and table 2.Table 1 shows local names and phenology of legume edibles. The food value of various parts of these edibles were documented in table 2. Out of these fifteen plants six were trees, six were shrubs and three were herbs. Leaves of four, flowers of five, pods of six and seeds of two plants were used as vegetables and some were used as spices or 'dals'.

TABLE 1	Phenology of legume plants

S.No.	Plant name	Family	Local name	Flowering and Fruiting Time
1.	Acacia nilotica	Mimosaeae	Babul,Kikar	Aug-Nov and Nov-Apr
2.	Bauhinia purpurea	Caesalpiniaceae	Kachnar	Nov-Feb and Feb-Mar
3.	Bauhinia variegata	Caesalpiniaceae	Kachnar	Jan-Mar
4.	Canavalia ensiformis	Papilionaceae	Bara sem	Nov-Mar
5.	Crotalaria juncea	Papilionaceae	Sanai	Aug-Nov

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S.No.	Plant name	Family	Local name	Flowering and Fruiting Time
6.	Cyamopsis tetragonoloba	Papilionaceae	Guar	Sept-Nov
7.	Dolichos lablab	Papilionaceae	Sem	Aug-Nov
8.	Lathyrus sativa	Papilionaceae	Akhri	Nov-Feb
9.	Medicago polymorpha	Papilionaceae	Susuna	Nov-Feb
10.	Mucuna pruriens	Papilionaceae	Kevanch	Oct-Nov and Nov-Feb
11.	Pithecellobium dulce	Mimosaeae	Jangal Jalebi	Jan-Mar and Mar-May
12.	Sesbania grandiflora	Papilionaceae	August	Aug-Nov
13.	Tamarindus indica	Caesalpiniaceae	Imli	Jun-Jul and Sept-Nov
14.	Trigonella foenum graecum	Papilionaceae	Methi	Nov-Feb
15.	Vicia faba	Papilionaceae	Bakla	Nov-Feb

TABLE 2- Use of legume edibles

S.No.	Plant name	Habit	Plant part used
1.	Acacia nilotica	Tree	Gum is used as tonic.
2.	Bauhinia purpurea	Tree	Tender leaves,flowers,tender pods are used as veg- etables; Flowers are used to make 'Pakaudi'.
3.	Bauhinia variegata	Tree	Tender leaves and flowers are used as vegetables
4.	Canavalia ensiformis	Shrub	Pods are used as vegetables
5.	Crotalaria juncea	Shrub	Flowers are used as vegetables; fried with oil and then used
6.	Cyamopsis tetragonoloba	Shrub	Pods are used as vegetables
7.	Dolichos lablab	Shrub	Pods are used as vegetables
8.	Lathyrus sativa	Herb	Seeds are used as 'Dal'
9.	Medicago polymorpha	Herb	Leaves are fried with oil and jeera and then used as vegetables.
10.	Mucuna pruriens	Shrub	Pods are first boiled in water and then used as vegetable
11.	Pithecellobium dulce	Tree	Pods are eaten raw.
12.	Sesbania grandiflora	Tree	Large edible flowers are used as vegetable and also used in making 'pakaudi'
13.	Tamarindus indica	Tree	Ripe fruits are eaten raw as well as used as a spice;Flowers are also edible.
14.	Trigonella foenum graecum	Herb	Leaves are used as vegetable in making 'Saag'
15.	Vicia faba	shrub	Seeds are used as 'Dal'

Conclusion-

These new sources of food can be used to combat malnutrition, hunger and to reduce burden on overexploited legumes. Adaptation of new sources will bring the unexploited underutilized and neglected plants into mainstream of consumption. All these plants need less cultural requirements and can be used to alleviate the economic status of people. There is a urgent need for the bioprospection of these plants of future.

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