

## Search for New Functional Foods in a Western Himalayan District of Jammu and Kashmir in India.

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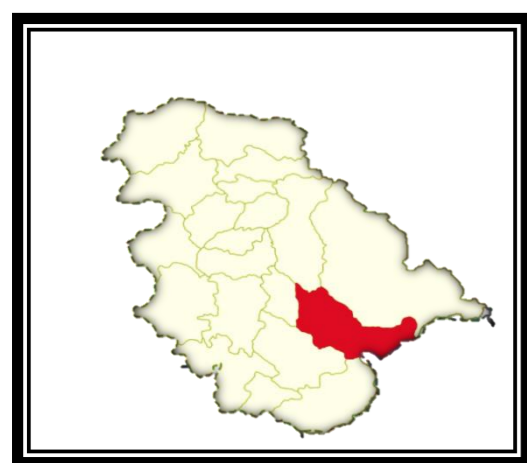
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### INTRODUCTION & AIM

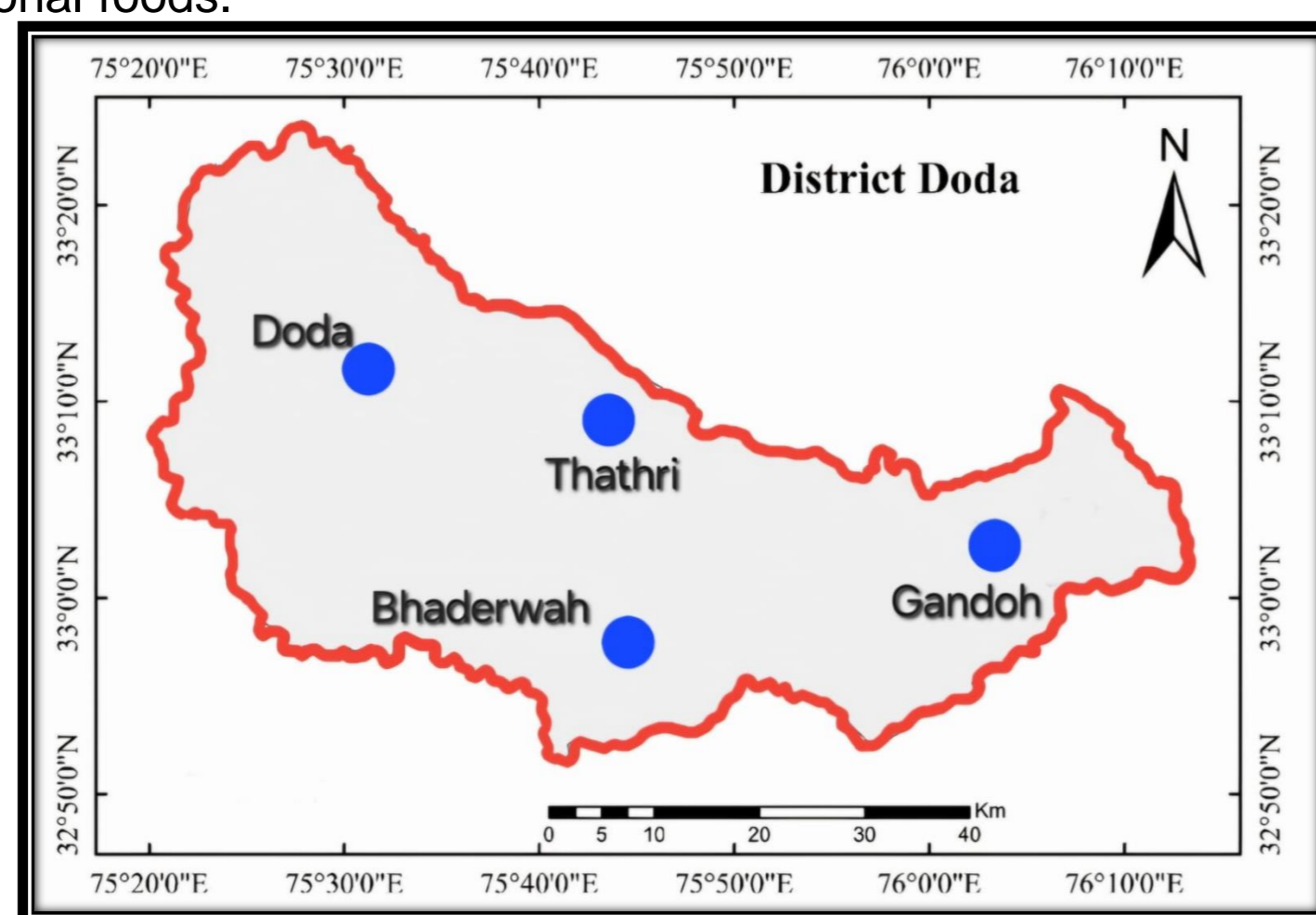
Foods that confer additional health benefits to humans apart from providing nutrients are referred to as 'functional foods'. Wild edible plants are often referred to as "new functional foods" due to the wide variety of benefits offered by them (El Sohaimy, 2012). In an attempt to search for 'new functional foods, this study was carried out in Doda District of the Union Territory of Jammu and Kashmir, India (fig 1). The region is rich in plant diversity owing to its geographical attributes including high altitude and diverse climatic conditions. The district is inhabited by multiple ethnic groups and also a few tribes. The local populace being predominantly rural still utilizes wild edible plants which are collected by them from the large forest area of this region. This research was conducted in the study area to ascertain the botanical identification of the wild edible plants being consumed in the region and to identify potential functional foods.



(a) India



(b) Union Territory of J&K



(c) District Doda in J&K

Figure 1: Map of the Study Area

### METHOD

#### Field Survey:

The ethnobotanical survey regarding use of the local Wild Edible Plant species was carried out in remote villages of District Doda. 24 villages were selected for the field survey in total from all the five sub-divisions of the district viz Doda, Thathri, Bhalessa, Assar and Bhaderwah. The investigation was done by following the methodology of Jain (2010) and Martin (2010) i.e. by conducting interviews and discussions with the local inhabitants including rural people and tribals. The information of plants utilized for edible purposes was collected by using semi-structured questionnaires. A total of 209 informants were interviewed during the field trips and collection of plants was also done. The plant specimens were pressed and identified. The herbarium sheets of the identified specimens were prepared and subsequently submitted to University of Jammu Herbarium.

#### Data Analysis:

The data collected about the ethnobotanical information of WEPPs was analysed using ethnobotanical indices like Use-value, Factor Informant Consensus and Cultural Importance. The se indices were calculated as:

Use-value (UV)  $UV = \sum U/n$

where U is the number of use-reports cited by each informant for a given species and n refers to the total number of informants. Use values are high (approaching 1) when there are many use-reports for a plant, implying that the plant is important, and approach zero (0) when there are few reports related to its use.

Cultural Importance Index (CI)  $CI = UR/N$

where UR is the number of different uses mentioned for each taxon and N is the total number of informants interviewed

Factor Informant Consensus (Fic)  $Fic = nur - nt / nur - 1$

Where Fic = informants consensus factor, nur = number of use citation, nt = number used species.

#### Nutrient Evaluation:

Nutritional evaluation of some plants having highest importance as indicated by data analysis was carried out. The methodology followed was according to the standard methods of AOAC (Association of Official Agricultural Chemists)

#### Mineral Content :

The selected plants were also evaluated for presence of important minerals essential for human health. The method used was ICP-MS (Inductively coupled plasma mass spectrometry)

### RESULTS & DISCUSSION

This study revealed that local people of the study area i.e. District Doda use of 64 wild edible plants for dietary as well as medicinal purposes. These plants belong to 30 families (fig 2).

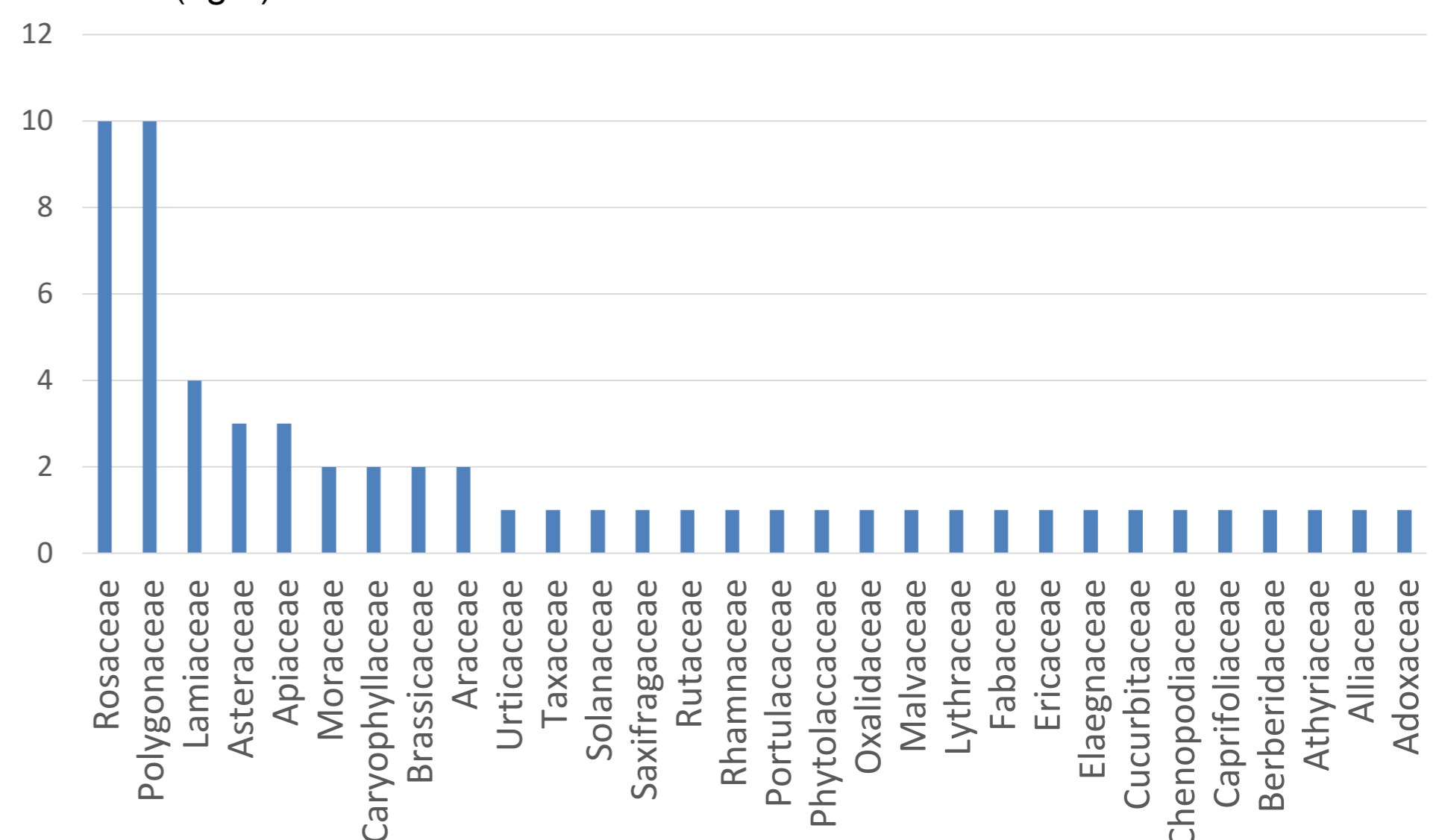


Fig 2: Families of Wild Edible Plants Consumed in District Doda of J&K

Most of these plants are consumed in the region as vegetables after cooking, many are consumed in raw form as fruits, others were reported to be used in chutneys, for spices, for preparing tea, sherbets, pickles, etc. Different modes of consumption of these plants are given in figure 3. Leaves were found to be the most consumed part followed by fruit.

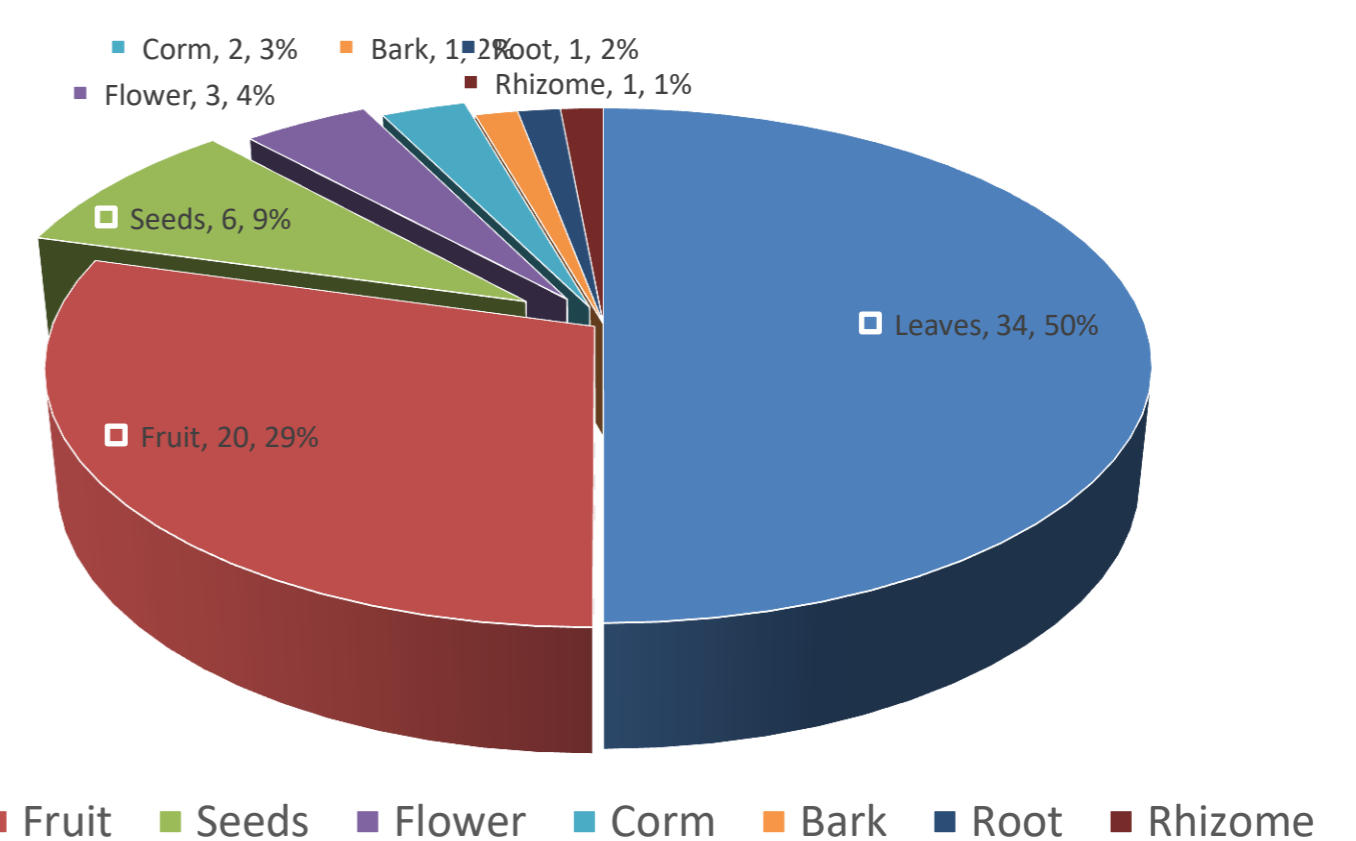


Fig3: Parts of the plants consumed in study area

The evaluation of nutrient and mineral content revealed promising results for some plants belonging to the family Asteraceae and Polygonaceae

### CONCLUSION

This research indicated that most of these identified wild edible plants are potential functional foods. Some of the plants showed good nutritional and mineral content on evaluation. But further experimental studies need to be conducted on these plants such as presence of heavy metals and anti-nutrients which act opposite to nutrients. This will ensure their safe utilization as functional foods.

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