Indigofera cassioides ROTTLER ex DC. (FABACEAE): A WILD MEDICO-FOOD PLANT

Snehalatha VR[1], Rakhee Dimri[2*], Arvind Kumar[3], Dilip Kumar Sharma[4], Sudar S Mety[5], Suchita P. Khodke[6], Sugimani Marndi[7] and Sanjeet Kumar[7]

[1]*Department of Botany, Govt. Victoria College, Palakkad, Kerala, India*
[2]*Department of Botany, VSKC Government PG College, Dakpathar, Dehradun, Uttrakahnd, India*
[3]*Acharya Narendra Deva University, Kumarganj, Ayodhya, Uttar Pradesh, India*
[4]*Vardhman Mahaveer Open University Kota, Rajasthan, India*
[5]*Shri. Gavisiddeshwar Arts, Science and Commerce College Koppal, Kartanataka, India*
[6]*Vinayak Vidnyan Mahavidyalaya, Nandgaon Kh, Amravati, Maharashtra, India*
[7]*Ambika Prasad Research Foundation, Cuttack, Odisha, India*
*Email Id:dimri.rakhi@gmail.com
DOI:

ABSTRACT

Malnutrition is a biggest problem throughout the world. In last some decades, human beings facing lot of infectious diseases too. Both problems are becoming serious for health and in the development of a nation. Both create low immunity among the populace of a boundary. Therefore, need to explore wild food plants having food and medicinal values. In this chapter, food and medicinal values of Indigofera cassioides are discussed to bring attention towards the wild nutraceutical for contemporary and upcoming future health care problems. A survey was done during 2019-2022 to collect the desired information and gathered information are presented in this chapter in the form of baseline data to make strategy with its value addition to better health and getting food security.

Keywords: Wild flowers, medico-food, medicinal, tribal, nutraceutical, food scarcity

INTRODUCTION

In 21st century, when we called ourselves, technically developed creature of the universe and technically sound in all aspects of life, still we are not able to get food security. Number of organisations are working globally on problems to get adequate food. It creates low immunity among the populace and make them sensitive to getting infectious diseases. Hence, need to search nutraceutical from the plant wealth. Plants are the major source of food and medicines from prehistoric. Wild food plant parts are collected from the forest by the tribal communities are used for various purposes globally. Tribal people depend on the forest for their life stuffs. Their indigenous traditional practices need to be conserved for addressing the solution of above cited problems. The consumption of wild food plants lead to reduce the risk of diseases and also help to enhance the immunity. Indigenous traditional practices are carried out by tribal people for a healthy lifestyles (Sharma 2016) which provide a platform for doing value additions. In urban areas, these wild food plants are unknown due to less documentation and diminishing of such practices day-by-day. Now a day's medico-food plants are on a priority list and over the past two decades, there has been a tremendous increase in the reuse of wild food plants. However, there is still a significant lack of research on such traditional knowledge. During field works, we have encountered that tribal people consume flowers, tubers, and leaves of different plant species for vegetable purposes (Yesodharan and Sujana 2007; Kumar et al. 2017; Tuladhar 2021;Present study) which help them to get strong immunity. Keeping the importance of wild edible plants and malnutrition including contemporary infectious diseases, an attempt has been made to document the wild edible plant from Sundargarh and Mayurbhanj districts of Odisha. Numbers of plants observed and among them *Indigofera cassioides* is selected for detail studies. It is commonly called Giliri in a tribal areas of Odisha state. It belong to the family Fabaceae. It is wildly distributed in India ranging from East Asia to the Himalayas. It is a shrub mostly found in a dry areas in high elevation. Branches are erect and angular. Leaves are obovate, emarginate. The flower is pink or pinkish in colour. Many flower clusters

in one branch. Its medicinal values are also documented and able to cure many diseases like cough, inflammation, arthritis, and diuretic (Gudadhe et al. 2013). The flower part is mainly used for vegetable purposes (Mohanty and Rautaray 2018; Mallick et al. 2020). The present study highlights the importance of wild edible flowers for doing value addition.

METHODOLOGY

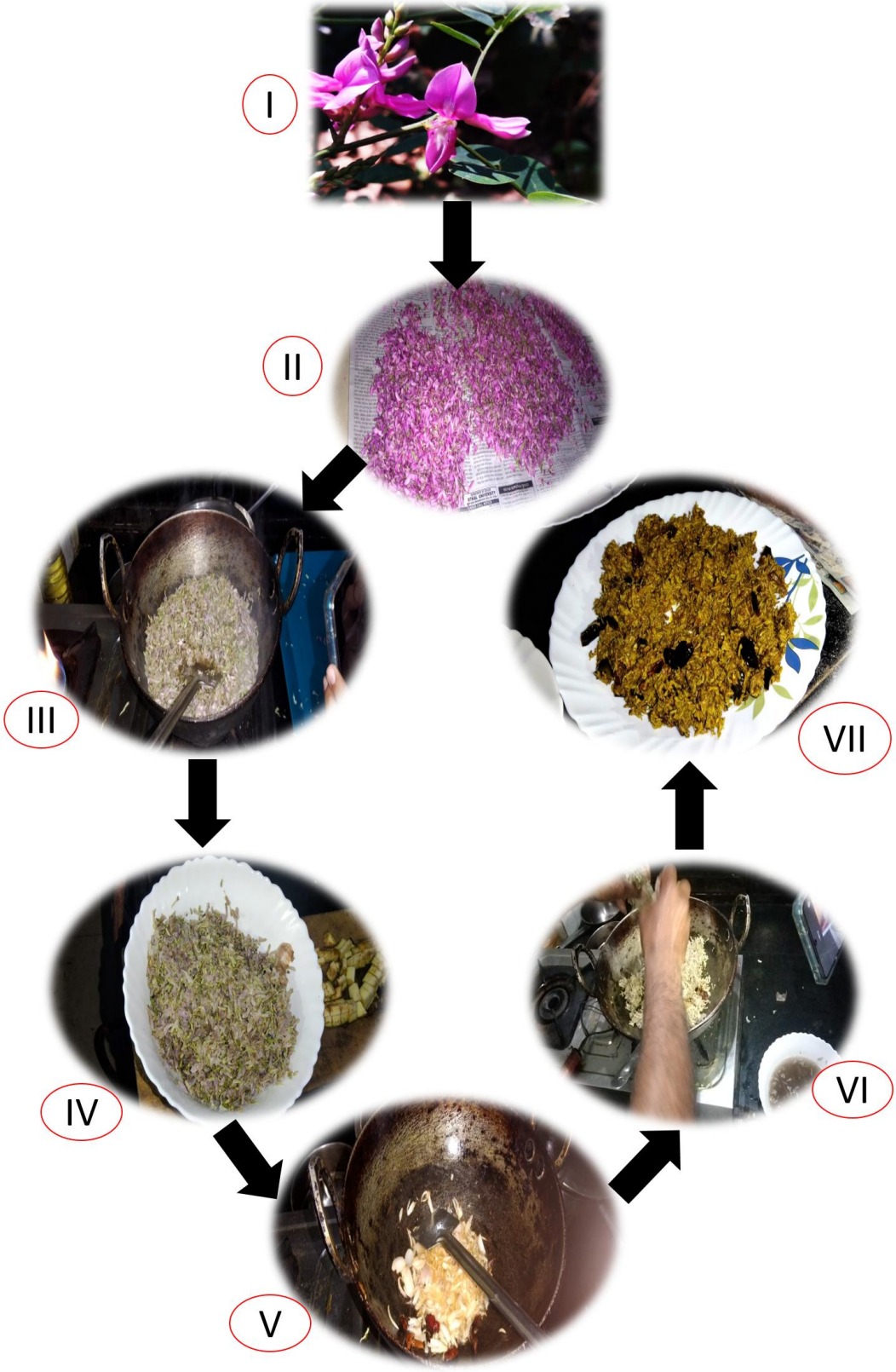
The literature and field surveys were carried out in the year 2019-2022. The interview with local people was conducted in the selected areas (Sundargarh & Mayurbhanj) of Odisha, India. The plant was identified by the authors using the literature and morphological characters (Haines 1925; Saxena and Brahmam 1995).

Plate 1: Traditional practices on *Indigofera cassioides*, a) Flowers of *Indigofera cassioides* for cooking purposes, b) Tribal women are selling flowers of *Indigofera cassioides* in Markets, c) Tribal women collected flowers from the forest area and discussion with team

RESULTS AND DISCUSSION

The survey results revealed that tribal people collect the flowers of *Indigofera cassioides* as a wild medico-food in study areas. It was noticed that the flowers are used for vegetable purposes. The flowers are collected mainly by the tribal women during February-March. Flowers of *Indigofera cassioides* have many medicinal uses and it is used in diabetes, as a tonic after delivery, in arthritis, to reduce inflammation, in liver diseases etc. Apart from medicinal and food values, it is also used for fences and fuel (Table1). It was observed that flowers are used to sell in the local markets. It holds a strong economic values. In Plate 1, it is shown that tribal women collect the flower of *Indigofera cassioides* and sell in the weekly markets. It was noticed that the process of cooking the flower is quite interesting (Plate 2). First, the buds of *Indigofera cassioides* are separated. Secondly, the flower was boiled with water (20 to 30 minutes) till the flower of pink colour turns into white. Third, take out the flower and rinse the

water, and put it aside to get cool. Fourth, place the container and add oil, onion, turmeric, salt, and vegetable like tomato or brinjal for better taste.



Snehalatha et al. (2022)

Plate 2: Flower of *Indigofera cassioides* used as a vegetable (I) Flower of *Indigofera cassioides*, (II) Separate the buds from a flower, (III) Boil the flower about 20-30 min, (IV) Take out the flower and let it cool for some time, (V) In a container add oil, onion, brinjal (VI) Add flower (VII) Flower of *Indigofera cassioides* is cooked and ready to serve as a wild nutraceutical food

Then serve as a vegetable which has both food and medicinal values. Many researchers have also reported that *Indigofera cassioides* have medicinal uses and can be used for vegetable purposes. In 2013, Gudadhe et al. reported that *Indigofera cassioides* has bioactive constituents which can be used to formulate drugs for future purposes. In 2020, Mallick et al. reported that flower is used for vegetable purposes in Odisha.

Table 1: *Indigofera cassioides* used by different people and their uses

Parts used	Uses	Source(s)
Flowers	As a leafy vegetable, used to treat diabetes.	Mallick et al. (2020); Dimri and Marndi (2017).
	Flowers are used as a wild vegetable by the Munda, Bhuian, Kisan, Santhal, Oram and Ho communities and also used to sell in the local markets.	Present study
Roots	Used as a tonic by the tribal women after delivery.	Rai (1987); Present study
Leaves	Used as a leafy vegetable and to treat arthritis, inflammation & liver problems.	Mohanty and Rautaray (2018); Kumar et al. (2013)
	Tender leaves are used to cure cough by the Bhuian tribe.	Present study
Stems	Used for fences and fuel.	Gudadhe et al. (2013)
	Flowers and stem decoction is used as a tonic.	Present study

CONCLUSION

The proper documentation and utilization of wild edible food plants can reduce the food problems and antimicrobial resistance. The consumption of such food plants able to enhance the immunity globally. The present chapter highlights the importance of such plants. *Indigofera cassioides* could be selected for value addition and advance research works. The value addition of such plants could create the livelihood opportunities among the locals and urban populace can get a nutraceutical in their food basket.

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