

Intelligentsia International Journal Of Multidisciplinary Research

A Study of Wild Edible Plants of Giridih District

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Abstract

Wild edible plants are very significant sources of natural food resources and hold considerable importance regarding their nutritional value, medicinal qualities, economic aspects, and culture. The importance of such plants is increasing in the current situation due to various concerns related to food security, nutritional needs, sustainable use of resources, and conservation of traditional knowledge. Jharkhand State has favourable ecological and climatic conditions for the presence of a rich variety of wild plant resources. Giridih district, with its abundance of forests, hills, plateaus, valleys, different vegetation, and suitable environments, provides suitable conditions for the growth of many wild edible plants. The main objective of the study is to find out some of the major wild edible plants occurring in Giridih district and assess their nutritional value, traditional uses, geographical distribution, significance, and major challenges facing their conservation. This is a descriptive and exploratory study and is mainly based on secondary data, literature, forest-related sources, research work, and other sources of information. It is observed that there are many wild edible plants which are being used locally, including varieties of plants which yield fruits, flowers, leaves, seeds, shoots, tubers, and other edible parts. They help in meeting local food needs and are closely linked to traditional knowledge and community practices. However, there are also many important challenges which need attention, especially the reduction in inter-generational transfer of traditional knowledge about wild edible plants. Young people are becoming less aware of their identification, gathering, processing, and uses. Deforestation, degradation of habitats, developmental activities, and changes in consumption patterns are also reducing their availability. Therefore, systematic documentation, botanical exploration, community awareness, conservation, and scientific assessment of their nutritional and economic potential are important for protecting these valuable plant resources.

Keywords: Wild Edible Plants, Giridih District, Traditional Knowledge, Food Resources, Conservation

Publication Timeline

Original Manuscript Received- July 05, 2026, Peer Review Completed- July 08, 2026, Revised Manuscript Received – July 10, 2026, Accepted & Published – July 10, 2026

Recommended Citation

Kumari, B. and Praveen, P. (2026). A Study of Wild Edible Plants of Giridih District. Intelligentsia International Journal of Multidisciplinary Research, 2(3), 1- 11.

Introduction

Consumption of wild edible plants has been a part of human food culture since ancient times and is still contributing to the nutrient requirements of various rural and forest-dependent populations (Carvalho & Barata, 2016). These are the naturally occurring plants without any sort of cultivation involving fruits, flowers, leaves, seeds, roots, tubers, shoots and other edible parts (Ray, et. al. 2020). Other than making up for regular diets, a number of wild edible plants have nutritive as well as traditional medicinal value and serve as alternative food sources in case of scarcity of agricultural products (Priyadarshini, 2024). They are an important part of the local biodiversity and traditional ecological knowledge base. Concerns over food security, nutrition diversification, sustainable food system and biodiversity conservation have recently increased the interest of academia to document wild edible plant resources scientifically (Kumar et. al., 2025).

The geographical characteristics of Jharkhand are favourable for the presence of a variety of wild edible plant species due to its plateau topography, forests, hills, valleys, seasonal streams and tropical climate. Forest resources have always had a bearing on the food culture, livelihood and culture practices of the communities living in various regions of the state (Kumar & Saikia, 2020). The Giridih district is particularly interesting in this regard because the varying physiography supports tropical deciduous flora and a number of useful plant species. Along with sal forests, there are mahua, kend, piar, jamun, jangli khajur, dumar, jangli ber, kusum, bamboo, bhelwa and several other naturally occurring plant species. Various plants have been collected by locals for personal consumption as a source of food and livelihood (Department of Forest, Environment & Climate Change, Government of Jharkhand).

The traditional knowledge associated with wild edible plants is becoming increasingly vulnerable due to shifting food preferences, urbanization, reduced dependence on forests, decreasing interaction of the younger generation with traditional practices, and inadequate documentation (Biswa et al., 2016). Increasing anthropogenic pressures, habitat degradation, overharvesting, and the lack of region-specific conservation assessments have also resulted in the decline of several valuable taxa (Das, 2026). On the other hand, deforestation, forest degradation, mining, infrastructural development, over-extraction of plant resources, and other developmental pressures may adversely affect their natural habitats. Therefore, the scientific study of wild edible plants in Giridih is essential for more than merely preparing a list of species, as it can help in understanding their nutritional values, traditional uses, distribution, socio-economic significance, and conservation needs.

Objectives and Methodology of the Study

The present study has the following objectives:

1. To identify and document the major wild edible plants found in Giridih district and examine their distribution, edible parts, traditional uses, and nutritional qualities.
2. To assess the significance of wild edible plants for local communities and examine the major threats and conservation issues associated with these plant resources.

The study is descriptive and exploratory in nature and is primarily based on secondary sources. Data and information have been collected from published research papers, books, government reports, Forest Survey of India reports, forest department records, and other relevant literature. Available botanical information has been systematically reviewed and classified according to plant species, edible parts, nutritional properties, traditional uses, and distribution. The findings have been interpreted to understand the botanical significance and conservation needs of wild edible plants in Giridih district.

Study Area Profile

Giridih district located in the Chota Nagpur Plateau in Jharkhand offers a diverse geographical and ecological background for study of wild edible plants. Giridih district was formed as a result of splitting of Hazaribagh district on 4 December 1972 (Official Website of Giridih District Administration). It currently has an area of about 4,853.56 km² with 2,772 villages. Topography of the district includes hill ranges, undulated plateaus, rocky uplands, valleys, cultivated lands, rivers, forest tracts. Giridih district could be divided into two regions Central Plateau and Lower Plateau. Parasnath hill with an altitude of about 1,365 m above mean sea level is the highest point in Jharkhand that creates a unique ecology of vegetation. The Usri, Barakar, Sakri and their tributaries and seasonal water courses form the local moist conditions and vegetation along valleys and water courses.

Topography, altitude, soil type, drainage and climate form different habitat types for vegetation comprising naturally growing plant species in the district. Giridih has a tropical monsoon climate, where summers are hot; rainy season occurs usually from June to September; winters are relatively cool. The presence of variations in elevation and local moist conditions provides local variability in vegetation types (Kumar et. al., 2016). Rocky uplands, forest slopes, woodland, scrub, moist valleys, river banks and village-forest edges offer different ecological niches for different types of trees, shrubs, herbs, vines, tubers and edible plants.

Natural vegetation is tropical deciduous where dominant forest tree species is Sal (*Shorea robusta*). Associated vegetation includes Mahua (*Madhuca longifolia*),

Kend (*Diospyros melanoxylon*), Piar/Chironji (*Buchanania lanzan*), Jamun (*Syzygium cumini*), Dumar/Gular (*Ficus racemosa*), Jangli Khajur (*Phoenix sylvestris*), Kusum (*Schleichera oleosa*), Jangli Ber (*Ziziphus* spp.), Bhelwa (*Semecarpus anacardium*), Bamboo, Palash and Semal (District Gazetteer, Hazaribag District, 1957). The presence of such flora types in various forest habitats makes Giridih a perfect location for studying wild edible plants.

The botanical significance of Giridih lies in the close relationship between its diverse forest habitats and the traditional utilization of naturally occurring plant resources. Its varied ecological conditions provide considerable scope for documenting lesser-known wild edible species, assessing their nutritional properties, preserving indigenous knowledge, and developing strategies for their sustainable utilization and conservation.

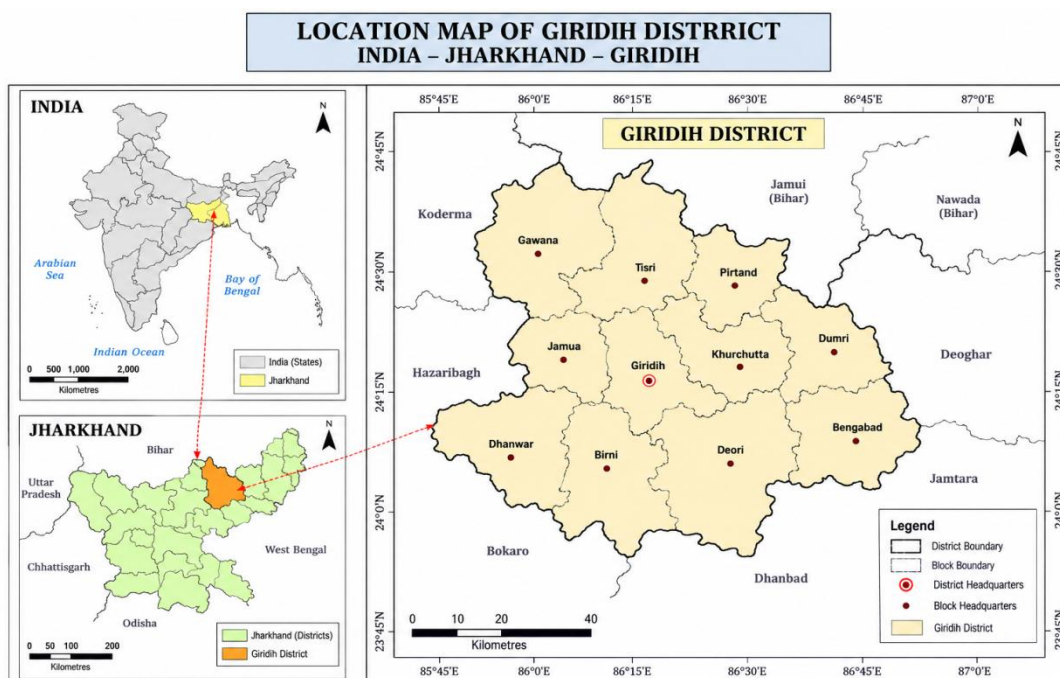


Fig 1, Giridih Location Map

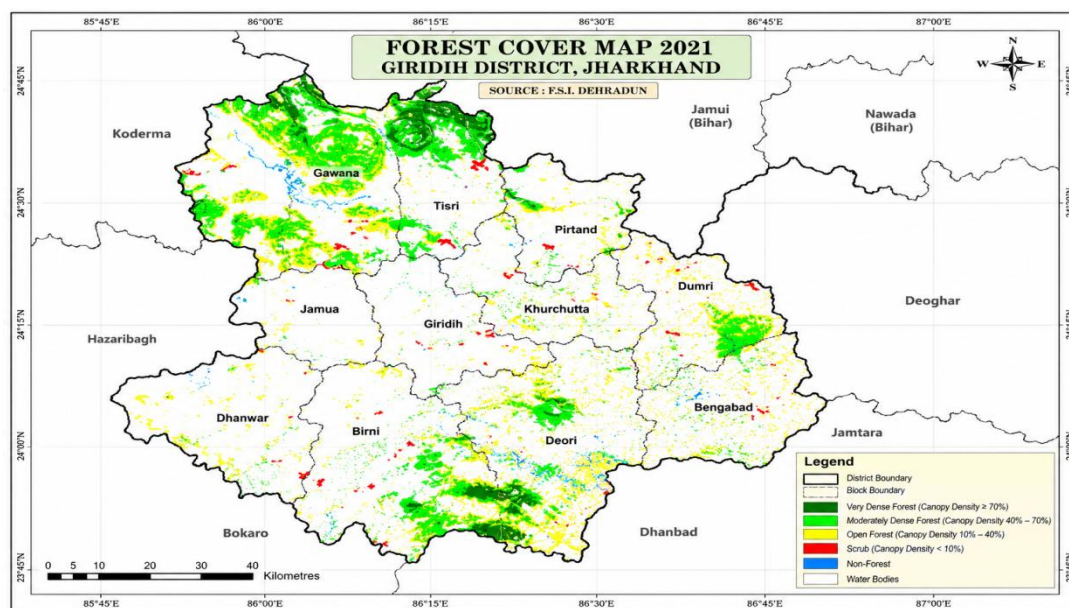


Fig 2, Forest Cover Giridih District

Wild Edible Plants of Giridih District

In this section, an analysis of the diversity of wild edible plants found in Giridih district is presented. It covers the major wild edible plants and their botanical characteristics, including scientific names, families, growth habits, and edible parts. The section further examines their distribution and habitats across different forest areas of the district, along with their nutritional qualities and significance as naturally available supplementary food resources for local communities.

- **Diversity of Wild Edible Plants**

Giridih district has considerable diversity of wild edible plants in terms of its diverse topography, tropical deciduous forest, hills, valleys, rivers, open forests, and scrub vegetation. These diverse habitats have several plant species which were traditionally used as food supplements by local communities. The wild edible plants of the district are diverse in growth habits and include trees, shrubs, herbs, climbers, and grasses. Trees form an important group which includes Mahua (*Madhuca longifolia*), Kend (*Diospyros melanoxylon*), Piar/Chironji (*Buchanania lanzan*), Jamun (*Syzygium cumini*), Dumar/Gular (*Ficus racemosa*), Kusum (*Schleichera oleosa*), Bhelwa (*Semecarpus anacardium*), Jangli Khajur (*Phoenix sylvestris*), and different species of wild Ber (*Ziziphus* spp.).

Diversity is further evident from the plant parts that are used as food. Depending upon the species, local communities make use of wild fruits, flowers, leaves, seeds,

kernels, tender shoots, roots, and tubers. The availability of the plants also differs seasonally as well as in relation to the prevailing habitat conditions. Forested and hilly regions like Gawan, Tisri, Pirtand, Parasnath, Dumri, and Khurchutta offer favourable conditions to many species, while open forests, scrublands, river banks, and village forest margins offer additional food plants. This diversity is an important botanical resource which needs systematic documentation and conservation.

• **Major Wild Edible Plants and their Botanical Characteristics**

There is a great variety of wild edible plants growing in the forests of Giridih district belonging to different botanical families and habits. Tree species form an important part as they produce seasonal fruits, flowers, seeds, kernels and other parts while at the same time helping in forest structure formation. Mahua, kend, piar, jamun, dumar, jangli khajur, jangli ber, kusum, and bamboo are some of the common wild edible plants of the region. Mahua is especially important for the sake of its edible flowers, while piar is important for its kernels. Jamun, kend, dumar, and jangli ber are important as they produce fruits which are eaten seasonally. Jangli khajur produces edible fruits and traditionally useful sap. Bamboo is a different type of habit as its tender shoots can be used as food where traditionally consumed.

The botanical characteristics of these plants determine both their ecological adaptations and parts that can be used for consumption by man. Some of the plants occur primarily in deciduous forests, whereas others are found in open forests, scrub lands, forest margins, moist valleys and riverine habitats. Fruit and flowering seasons of the plants are also important in determining their availability seasonally. These plants thus not only serve as food supplements, but are also an important botanical resource of the district. Proper identification of these plants is important in order to document their uses and avoid any confusion with non-edible plants.

Table: 1
Major Wild Edible Plants reported/recognized in Giridih District

Sl. No.	Local /Common Name	Scientific Name	Family	Habit	Major Edible/Used Part
1	Mahua	Madhuca longifolia	Sapotaceae	Tree	Flowers, ripe fruits
2	Kend/Kendu	Diospyros melanoxylon	Ebenaceae	Tree	Ripe fruits
3	Piar/Chironji	Buchanania lanzan	Anacardiaceae	Tree	Fruits, kernels
4	Jamun	Syzygium cumini	Myrtaceae	Tree	Ripe fruits
5	Jangli Khajur	Phoenix sylvestris	Arecaceae	Palm	Fruits, sap
6	Dumar/Gular	Ficus racemosa	Moraceae	Tree	Ripe fruits

7	Jangli Ber	Ziziphus spp.	Rhamnaceae	Shrub/ Small tree	Ripe fruits
8	Kusum	Schleichera oleosa	Sapindaceae	Tree	Ripe fruits
9	Bamboo	Bambusa spp.	Poaceae	Bambo o/Gras s	Tender shoots
10	Bhelwa/Bhila wa	Semecarpus anacardium	Anacardiaceae	Tree	Traditionally processed parts*

• *Distribution and Habitat of Wild Edible Plants*

The distribution pattern of the wild edible plants in the district is largely linked with the variation in forest cover, topography, soil, moisture, and human intervention. The forest-covered hill areas of Gawan, Tisri, Pirtand, Parasnath, Dumri, and Khurchutta favor the growth of various kinds of wild edible plant species. Mahua, kend, piar, kusum, and bhelwa belong to the category of tropical deciduous forests or open woodlands. Jamun and dumar grow in comparatively more moist places such as valleys, river banks, and moister soils. Jangli ber grows in relatively dry habitats in open forests, scrub, hills, and village borders. Similarly, jangli khajur grows in open and comparatively less dense vegetations, and bamboo grows in relatively moist forests and hills.

Distribution of the wild edible plants is further differentiated by the two divisions of forests. In Giridih East, the vast forest areas are available in the range of Gawan, Dumri, Parasnath, Giridih, and Khurchutta ranges. Likewise, in Giridih West, some habitats can be found in the range of Jamua, Dhanwar, and some areas of Birni and Deori. Agricultural influence is comparatively higher in some areas in Giridih West. Availability of the seasonal plants is yet another factor influencing the presence of the wild edible plants.

Table: 2

Habitat and Probable Distribution of Major Wild Edible Plants in Giridih District

Wild Edible Plant	Major Habitat	Major Areas/Forest Tracts	Distribution Pattern
Mahua	Deciduous forest, open woodland, village margins	Gawan, Tisri, Dumri, Pirtand, Khurchutta	Widely distributed
Kend/Kendu	Dry deciduous and open forest	Gawan, Tisri, Pirtand, Dumri	Common
Piar/Chironji	Dry deciduous forest and hill slopes	Gawan, Tisri, Pirtand, Khurchutta	Scattered

Jamun	Moist sites, valleys, stream and river margins	Giridih, Dumri, Pirtand and riverine areas	Scattered
Jangli Khajur	Open forest, scrub and forest margins	Jamua, Dhanwar, Giridih and other open areas	Scattered
Dumar/Gular	Moist valleys and stream margins	Giridih, Dumri and other moist habitats	Localized
Jangli Ber	Scrubland, dry slopes and open forest	Jamua, Dhanwar, Birni, Deori and open forest areas	Widely scattered
Kusum	Deciduous forest and hill slopes	Gawan, Tisri, Pirtand, Khurchutta	Scattered
Bamboo	Moist forest patches and slopes	Gawan, Dumri, Pirtand, Parasnath	Patchy
Bhelwa	Deciduous forest and wooded slopes	Gawan, Tisri, Pirtand, Dumri	Scattered

• **Nutritional Quality of Wild Edible Plants**

Wild edible plants in the Giridih district have substantial nutritional value, as they add to the locally available diet by supplementing it with carbohydrates, fats, proteins, fiber, vitamins, minerals, and many other nutrients. Some fruits, including jamun, kend, jangli ber, dumar, and jangli khajur, contribute sugars, fibers, vitamins, and minerals to the diet. Flowers of mahua trees are especially valuable as a seasonal energy-rich food due to their high sugar content. The kernels of piar and chironji trees are good sources of fat and proteins, thus forming a relatively energy-rich forest food. Kusum fruits and seeds have some nutritional value. Young bamboo shoots are known as a fiber-rich and nutritious plant that needs correct processing before consumption.

Nutrition value from these wild edible plants depends on many factors, such as species, parts eaten, maturity, seasons, soil conditions, and the way of processing them. Thus, their role goes beyond hunger satisfaction; they can be used to improve the nutrition of forest communities and ensure their seasonal food security. Vitamin C-rich and antioxidant-containing fruits can complement cereal-based diets, and seeds and kernels can help provide fats and proteins. However, some forest plants require proper identification and processing before being used as food. Thus, the scientific nutritional analysis of the collected local species is essential.

Table: 3

Nutritional Significance of Major Wild Edible Plants of Giridih

Plant	Edible Part	Major Nutritional Components	Nutritional Significance
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Mahua	Flowers	Natural sugars, minerals, fibre	Energy-rich seasonal food
Kend/Kendu	Fruit	Carbohydrates, fibre, vitamins	Energy and dietary fibre
Piar/Chironji	Kernel	Fat, protein, minerals	Energy and protein source
Jamun	Fruit	Vitamin C, fibre, antioxidants	Micronutrient and antioxidant value
Jangli Khajur	Fruit	Sugars, fibre, minerals	Energy and mineral source
Dumar/Gular	Fruit	Fibre, carbohydrates, minerals	Supports dietary diversity
Jangli Ber	Fruit	Vitamin C, sugars, fibre	Vitamin and energy source
Kusum	Fruit/seed	Oil, carbohydrates and minerals	Energy and traditional food value
Bamboo	Tender shoots	Fibre, protein, minerals	Fibre-rich supplementary food
Bhelwa*	Traditionally processed parts	Bioactive compounds	Limited traditional use

Threats and Suggestions for Conservation and Sustainable Utilisation

Wild edible plants of Giridih district face threats from both the environment and socio-economic sectors. Deforestation, forest degradation, mining, expansion of settlements, infrastructure development, forest fires, grazing and overexploitation of forest produce can lead to loss of habitat and decrease in natural regeneration of species. Overexploitation of fruits, flowers, seeds, roots and other plant parts may further reduce the reproductive ability of useful species. Climate change and variability in rainfall can also affect flowering and fruiting patterns. One important issue of concern is the gradual loss of indigenous knowledge related to wild edible plants. Change in food habits, preference for commercial foods, migration, urbanization and limited contact of the younger generation with the forest are some of the major reasons behind it.

Conservation needs an integrated approach of scientific management along with indigenous traditional practices. Useful species need to be scientifically surveyed and recorded with information about their names, habitats, availability in seasons, nutritive value and conservation status. Natural populations can be conserved while selected species can be grown through nurseries, community forests, home gardens

and agroforestry systems. Sustainable harvesting methods can be developed in such a way that enough fruits and seeds are left for natural regeneration. Participation of local communities, especially traditional collectors and elders, can be encouraged in documentation and conservation efforts. Generation awareness, nutritional research, value addition, local processing and sustainable market development can promote their sustainable utilization and conservation.

Conclusion

It is clear from the study that there exists significant diversity of wild edible plants in Giridih district due to its heterogeneous topography, presence of tropical deciduous forests, good climatic conditions, and various types of ecological habitats. Mahua, kend, piar/chironji, jamun, jangli khajur, dumar/gular, jangli ber, kusum, bamboo, and bhelwa are some of the significant natural plant resources of the district. However, these are not only of biological importance because the fruit, flower, seed, kernel, shoots, and other parts of these plants are used in various food practices and provide supplementary nutrition to the people. Various studies have shown that these plants are rich in carbohydrate, protein, fat, fiber, vitamins, minerals, and other bioactive compounds. It is also evident from the traditional use of these species that there was certain amount of knowledge about the ecology of these plants among local and forest dependent communities.

Conservation of these natural resources has become difficult due to deforestation, degradation of habitat, mining, developmental activities, unsustainable extraction, and changing environment. In addition, there has been a gradual loss of traditional knowledge by the younger generation. Therefore, the need of the hour is the documentation of botanical aspects of these plants, their identification in the field, evaluation of nutritional value, habitat conservation, sustainable extraction, and involvement of the community members. Increased scientific interest in less known plants may further lead to the discovery of some new potentials in these plants.

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