A REPORT ON

TRADE OF MEDICINAL PLANT PRODUCTS IN BIHARSHARIF AND ITS ADJOINING AREA.

FOR

BIHAR STATE BIODIVERSITY BOARD PATNA, BIHAR

SUBMITTED BY

SIMRAN KUMARI

NALANDA COLLEGE, BIHARSHARIF

(A CONSTITUENT UNIT OF PATLIPURTA UNIVERSITY, PATNA)

GARHPAR NEAR CIVIL COURT BIHARSHARIF, NALANDA

ACKNOWLEDGEMENT

The successful completion of any task would be incomplete without mentioning the names of those persons who helped to make it possible. I take this opportunity to express my gratitude in few words and respect to all those who helped me in the completion of this project.

I would like to express my heartfelt gratitude to the Bihar State Biodiversity Board, Patna, for granting me the opportunity to conduct this study on the trade of medicinal plants products in Biharsharif and its adjoining areas. This platform enabled me to engage deeply with the herbal markets, interact with local stakeholders, and understand the multifaceted dynamics of biodiversity-based economies.

I extend special thanks to my institution, Nalanda College, Biharsharif, and its faculty members for their support and encouragement throughout this project.

It is my humble pleasure to acknowledge my deep senses of gratitude to my supervisor, Mr. Hem Kant Roy Sir and Mr.Bhawesh sir for his valuable support, constant help and guidance at each and every stage, without which this report would not have come forth.

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INTRODUCTION

Bihar Sharif, a historically and culturally significant town located in the Nalanda district of Bihar, has emerged as a dynamic center for the trade of medicinal plant products. Surrounded by ecologically diverse landscapes and culturally rich communities, the region offers a unique blend of traditional knowledge and evolving commercial practices. The growing awareness of herbal remedies, Ayurveda, and organic lifestyles has further boosted the relevance of this sector.

Medicinal plants not only hold economic value but also carry immense cultural and therapeutic significance. Many of the herbs sold in these markets have been traditionally used in home remedies for generations and are recognized in ancient Indian texts of Ayurveda, Unani, and Siddha systems of medicine. This heritage contributes to their continuing demand in the modern wellness industry.

The adjoining regions, especially Rajgir and parts of Patna such as Marufganj, act as complementary zones that supply and distribute a wide variety of medicinal plants. Rajgir, known for its forests and religious tourism, contributes to the raw material supply chain, while Marufganj operates as a major wholesale hub. Together, these form an integrated network that supports the collection, movement, and trade of medicinal plant resources, ensuring a steady flow of material into Biharsharif's markets.

This report is an effort to document, analyze, and interpret the intricate network of medicinal plant trade in this region. It seeks to highlight the key players, identify traded species, examine market challenges, and propose measures for sustainable and equitable trade practices. It also contributes to the broader discourse on biodiversity conservation and rural development in Bihar.

OBJECTIVES OF THE STUDY

The present study was guided by a series of specific and interrelated objectives designed to uncover the full scope of medicinal plant trade in Bihar Sharif and its surrounding areas. These objectives served as the foundation for data collection, field visits, and analysis.

1) A comprehensive catalog of traded plant species, including both local and scientific names, was prepared. Special attention was given to species that are native to the region and have a high trade volume or medicinal relevance.

2) Each plant species was studied to identify which part i.e, root, stem, leaf, bark, seed, fruit, flower, is used and how frequently it is traded. This helps in understanding harvesting pressures and ecological impacts.

3) To analyze the structure of the local herbal trade market, that involves mapping the roles of collectors, middlemen, shopkeepers, wholesalers, and end buyers.

4) Tools like GPS-enabled mobile apps and Google Earth were used to mark important market areas, herbal shops, and nearby forest collection zones, helping visualize the physical spread and accessibility of the trade network.

5) Understanding when certain species are more available and how prices change with seasons or availability is essential for trade optimization and conservation planning.

6) To assess challenges faced by stakeholders, that includes socio-economic, infrastructural, and regulatory barriers that limit the potential of the medicinal plant trade, especially for small collectors and local traders.

DURATION OF WORK

The present study on "Trade of Medicinal Plant Products in Biharsharif and its Adjoining Areas" was conducted over a period of three months.

- **Study Period** – 15 April 2025 – 14 July 2025

  This time frame was carefully planned to allow for –
- **Preliminary Preparation** –Reviewing relevant literature, designing the questionnaire, and identifying key stakeholders such as shopkeepers, consumers, and wholesale traders.

- **Field Engagement** – Visiting Biharsharif retail markets, adjoining areas like Rajgir shopes, and selected Wholesale hubs in Patna City to gather first-hand information.

- **Data Compilation** – Organising species lists, price details, and sourcing patterns, as well as tabulating the responses from traders and collectors.

- **Analysis & Interpretation** – Studying the patterns of trade, the role of local and external supply sources, and the challenges faced by stakeholders in the medicinal plant sector.

- **Report Preparation**–Drafting, Structuring, and refining the report content, integration photographs, tables, and recommendations.

  By spanning this period, the study was able to capture a realistic picture of the medicinal plant trade network, balancing immediate field observations with careful documentation and analysis. This ensured that the findings presented here are not only fact-based but also reflective of the prevailing market and ecological conditions during the study period.

NEED OF THE STUDY

Medicinal plants form a vital component of traditional healthcare systems and rural livelihoods in india. In Bihar, their use spans across household remedies, Ayurvedic preparations, and small-scale commercial trade. The medicinal plant sector supports not only cultural heritage but also local economies through collection, processing, and marketing. Bihar Sharif as a prominent market center in Nalanda district, plays a key role in distributing medicinal plant products to local consumers, traditional healers, and small pharmacies.

Despite its importance, there is limited documentation on the nature of trade in Biharsharif, particularly in terms of the species sold, their sources, and the linkages between local collection areas and external wholesale markets. Rajgir forests, located nearby, supply a number of species to Biharsharif traders, but most of the demand is met by imports from wholesale hubs such as Patna City, and other inter-state sources. Understanding this trade flow is essential for both Biodiversity conservation and the strengthening of local supply chains.

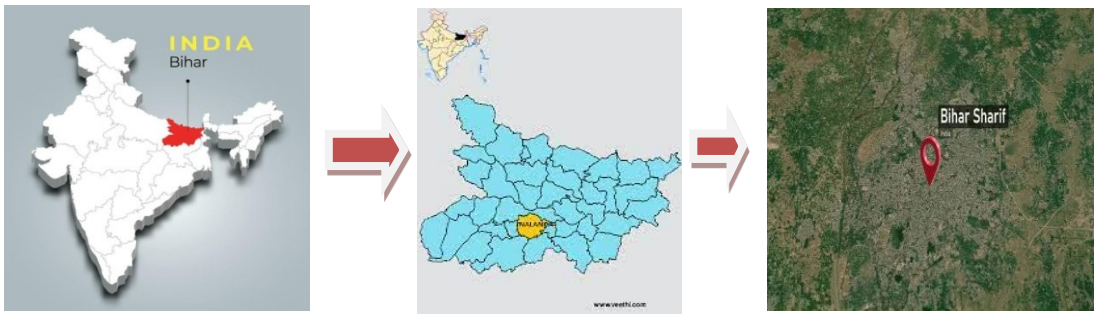
The absence of systematic data makes it difficult for policy-makers and conservation bodies to monitor harvesting practices, assess sustainability, or identify species under pressure.

A baseline study is therefore required to –

- Provide an inventory of medicinal plant species in the market, including local and scientific names.
- Classify their origin as locally collected or sourced from outside wholesale markets.
- Understand pricing patterns, seasonality, and demand drivers.
- Identify challenges faced by traders, collectors, and intermediaries.

Thisstudywill also serve as a resource to design informed interventions, such as training collectors in sustainable harvesting, promoting cultivation of high-demand species, and ensuring quality standards in the market. By filing the knowledge gap, the study will contribute to safeguarding both the ecological resource base and the livelihoods that depend on it.

DESCRIPTION OF THE STUDY AREA



Biharsharif, the district headquarters of Nalanda in Bihar, is a city steeped in history and culture. It has played a vital role in the historical and religious development of the region. Known as a gateway to the ancient Nalanda University, Biharsharif serves as a living link to India's rich past. The city's roots go back to the times of the Magadh Empire, which was one of the most powerful empires in ancient india. Biharsharif has witnessed the rise and fall of many dynasties, including the Mauryas, Guptas, and later, the Delhi Sultanate and Mughals. These rulers left behind architectural and cultural legacies that can still be seen in the form of forts, mosques, and temples.

The city has also been a significant centre for religious learning, particularly during the height of Buddhism and Jainism. Pilgrims and scholars have visited the region for centuries to explore its sacred sites and ancient ruins.

Biharsharif today reflects a harmonious to its diverse cultural fabric. The local economy is primarily agriculture, supported by small-scale trade and commerce. The city also acts as a market hub for surrounding rural areas, supplying goods ans services to the nearby villages. The medicinal plants trade in Biharsharif has deep historical roots, stretching from ancient times to the present day. The nearby region of Nalanda and Rajgir was a renowned center of medical learning in ancient India. During the time of Nalanda University, Ayurveda, siddha, and Buddhist medicine were actively taught, and many classical texts on herbal science were compiled.

During the Sultanate and Mughal periods, Biharsharif and the Rajgir area became important hubs for Unani medicine.

In the British colonial period, the trade became more organized with the development of railways and roads. Certain merchant families engaged in this trade for generations. Even today, this historical tradition continues.

METHODOLOGY

This study followed a descriptive and exploratory design, aimed at documenting species diversity, trade patterns, and sourcing linkages in the medicinal plant sector.

Primary Data Collection -

- Direct visits to medicinal plant shops and stalls in Biharsharif to record the species available for sale.
- Structured interviews and informal conversations were held with stakeholders, including wholesalers, Retailers, and Consumers.
- Samples of traded medicinal plants were photographed and geotagged using GPS Map Camera.
- Administering a Pre-prepared questionnaire to retailers and wholesalers to collect information on sources, prices, and challenges.

Secondary Data Collection–

- Reviewing existing reports, academic articles, and market records related to medicinal plant trade.
- Consulting published ethnobotanical literature for verification of species identity and uses.

Sampling Strategy

A purposive sampling approach was adopted, targeting key market locations in Biharsharif and adjoining supply sources.

Data Recording and Species Identification

- Local names were recorded during field visits.
- Scientific names were confirmed using standard botanical references.
- Information on plant parts used like, roots, bark, leaves, seeds, etc., was noted.

ABOUT MEDICINAL PLANTS

Medicinal plants are natural plant species that have healing properties due to the presence of bioactive compounds in their different parts such as leaves, roots, bark, flowers, seeds, or fruits. These plants have been used for centuries in traditional medicine systems like Ayurveda, Unani, and Traditional Chinese Medicine to prevent and treat various diseases. The active substances extracted from medicinal plants include alkaloids, flavonoids, terpenoids, and glycosides, which possess therapeutic effects such as anti-inflammatory, antimicrobial, antioxidant, and analgesic properties. Beyond their medicinal use, these plants play a vital role in maintaining ecological balance and supporting the livelihoods of rural communities through herbal trade and cultivation. With the increasing interest in natural and alternative medicine worldwide, medicinal plants have gained significant attention in scientific research for drug development. However, challenges like overharvesting, habitat loss, and lack of quality control demand sustainable conservation and responsible utilization to preserve these valuable natural resources for future generations.

Medicinal plants not only contribute significantly to human health but also have immense ecological, economic, and cultural importance. They help maintain biodiversity, support ecosystem functions, and provide raw materials for the global herbal and pharmaceutical industries. In many developing countries, they form a major source of livelihood for local collectors, cultivators, and traders. Moreover, the growing global demand for herbal medicines and natural products has spurred increased scientific research focused on identifying novel compounds, standardizing extracts, and validating traditional knowledge through modern pharmacological methods.

Despite their importance, medicinal plants face serious threats from overexploitation, habitat destruction, climate change, and unsustainable harvesting practices. The loss of natural habitats and over-harvesting have endangered many species, reducing their availability and genetic diversity. Additionally, challenges such as lack of quality control, adulteration, and inadequate regulatory frameworks in herbal markets undermine the safety and efficacy of plant-based medicines. Therefore, sustainable management strategies - including conservation programs, cultivation practices, community participation, and policy interventions, are critical for preserving medicinal plant resources.

TYPES OF MEDICINAL PLANTS

1.Based on Plant Parts Used –	• Root-based medicinal plants. • Leaf –based medicinal plants. • Bark-based medicinal plants. • Flower-based medicinal plants. • Fruit/Seed-based medicinal plants.	Example - Ginseng, Valeriana. Example -Neem, Tulsi. Example - Cinchona, Cinnamon. Example -Chamomile, Sandalwood flowers. Example - Triphala, Fenugreek seeds.
2. Based on Habitat -	• Terrestrial medicinal plants • Aquatic medicinal plants	Example -Ashwagandha, Aloe vera. Example -Water lily, Gotu kola.
3. Based on Phytochemical Constituents -	• Alkaloid-containing plants. • Flavonoid-containing plants. • Glycoside-containing plants. • Terpenoid-containing plants.	Example -Atropa belladonna, Papaver somniferum. Example -Ginkgo biloba, Green tea Example -Digitalis purpurea Example -Mentha, Eucalyptus
4. Based on Use in Traditional Medicine -	• Herbal medicines • Aromatic plants • Spices as medicine	Example -Tulsi, Amla. Example –, Lavender, Peppermint. Example - Mentha, Eucalyptus.

SOME COMMON MEDICINAL PLANTS & THEIR USES

Sl.no.	Plant Name	Figure	Scientific Name	Common Uses
1.	Neem		Azadirachta indica	Treats skin diseases, wounds, antibacterial, antifungal.
2.	Ashwagandha		Withaniasom nifera	Reduces stress, boosts immunity, improves stamina.
3.	Aloe Vera		Aloe barbadensis	Heals burns, improves digestion, anti-inflammatory.
4.	Turmeric		Curcuma longa	Anti-inflammatory, treats arthritis, improves skin health.
5.	Ginger		Zingiber officinale	Relieves nausea, indigestion, reduces inflammation.
6.	Sarpagandha		Rauvolfia serpentina	Used for hypertension, mental disorders.
7.	Amla		Phyllanthus emblica	Rich in vitamin C, boosts immunity, promotes hair and skin health.
8.	Shatavari		Asparagus racemosus	Supports female reproductive health, boosts immunity.
9.	Peppermint		Mentha piperita	Aids digestion, relieves headaches and muscle pain.

MAJOR ACTIVITIES

This study involved a sequence of well-planned activities, carried out in different phases over the course of three months. Each activity was designed to systematically gather, verify and analyze relevant information about the medicinal plant and its trade network.

Preparatory Phase

- Outlining objectives, scope, and expected outcomes of the study.
- Studying existing reports, ethnobotanical records, and market surveys related to medicinal plants.
- Designing the questionnaire and interview guidelines to collect uniform and comparable data from different stakeholders.

Field Survey Activities

- Visiting medicinal plant shops to document available species, their sources, and selling prices.
- Conducting structured interviews with shopkeepers to understand supply chains, demand trends, and challenges.
- Noting product storage, packaging, and customer interaction methods used in the retail trade.
- Visiting adjoining shop areas and taking to local shopkeepers to identify species sourced locally.

Wholesale market linkage study

- Gathering information on bulk suppliers who supply medicinal plants products to Biharsharif retailers.

Data Compilation and Analysis

- Preparing species lists with both local and scientific names.
- Categorising plants part used and price range.
- Summarising qualitative insights from retailer and wholesaler interviews.

Report writing and Finalization

- Drafting the report with clearly defined sections such as introduction, objectives, methodology, and findings.
- Integrating photographs, tables, and names into the final rep

STUDY AREA – BIHARSHARIFRETAIL MARKET

Biharsharif, the district headquarters of Nalanda district, is not only known for its historical significance but also for its vibrant local markets. Among these, the retail trade of medicinal plants products forms an important and distinctive segment, sustaining traditional healthcare practices and serving the daily needs of local communities.

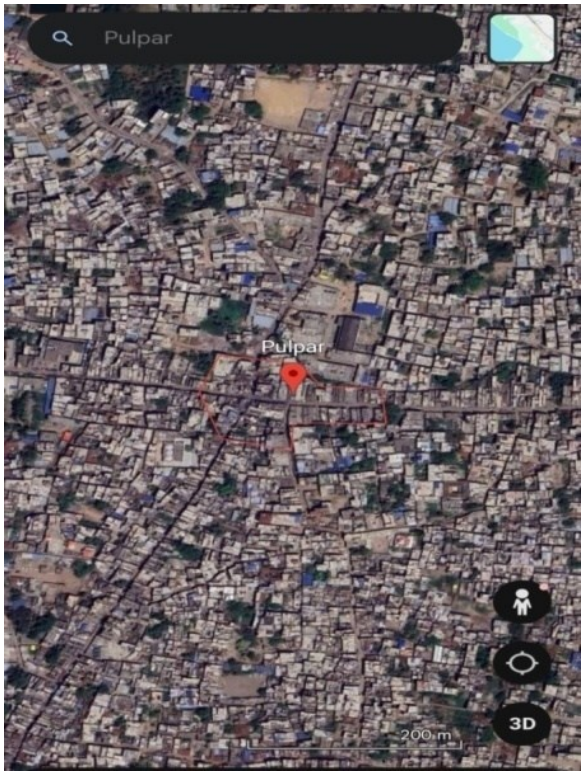
The core concentration of medicinal plant retail shops is in the Pulpar area, which acts as the main hub for herbal trade in the city, Pulpar itself extends into smaller localities such as **Mahalpar** and **Shaluganj Mohalla**, where several well-established family-run shops operate. These Outlets have been functioning for decades, often passing trade knowledge from one generation to the next. Apart from Pulpar, smaller clusters of retail shops are also located in **Bharaopar** and **Sohsarai**, each catering to the herbal needs of their surrounding communities.

Most shops in these areas are compact but densely stocked with a variety of dried herbs, roots, barks, seeds, flowers, and resins. Many products are displayed in open containers or in sacks, allowing buyers to check the aroma, texture, and freshness before purchase. While a portion of the stock, particularly certain seasonal herbs comes from, nearby forested areas like Rajgir, a significant share is sourced from wholesale markets in Patna City (Marufganj), and other supply centers outside Nalanda district.

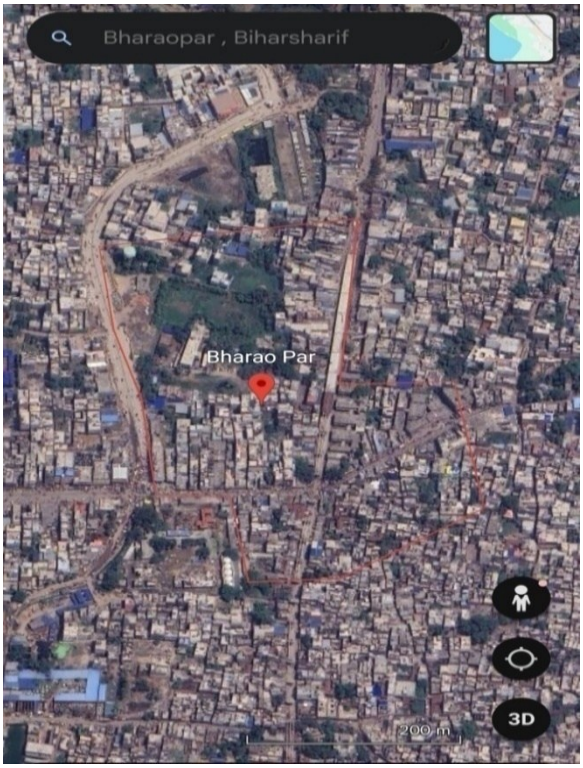
The Biharsharif retail market operates on a direct customer basis, unlike wholesale hubs that cater to large volume buyers. Customers include local households, faith healers, Ayurvedic doctors, and occasional visitors from nearby towns. Prices are generally affordable, making herbal medicines accessible to lower and middle income groups.

Beyond commerce, the herbal shops of Biharsharif, especially Pulpar plays an informal educational role. Shopkeepers, often well-versed in traditional knowledge, provide guidance on the uses, preparation, and dosage of various herbs. This combination of trade and traditional wisdom positions the Biharsharif retail medicinal plant market as an essential link in Bihar's herbal medicine supply chain.

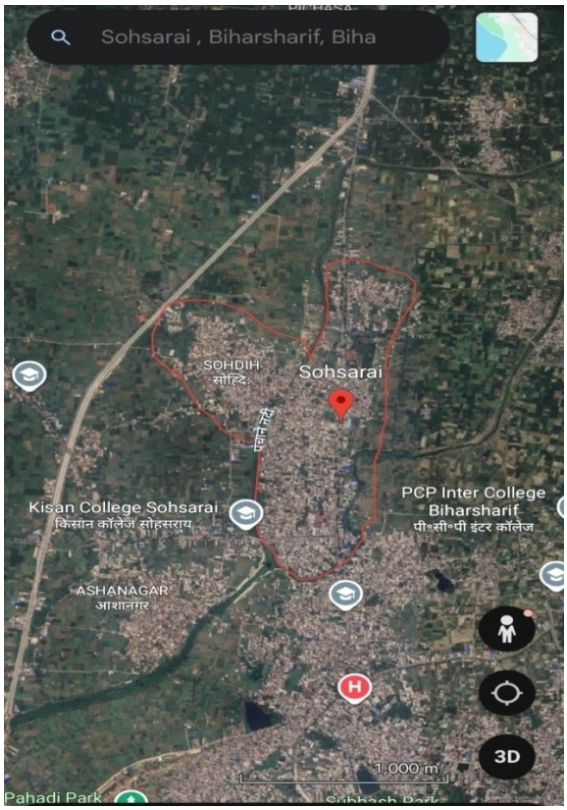
MAPPING OF HERBAL TRADE POINTS IN THE STUDY AREA



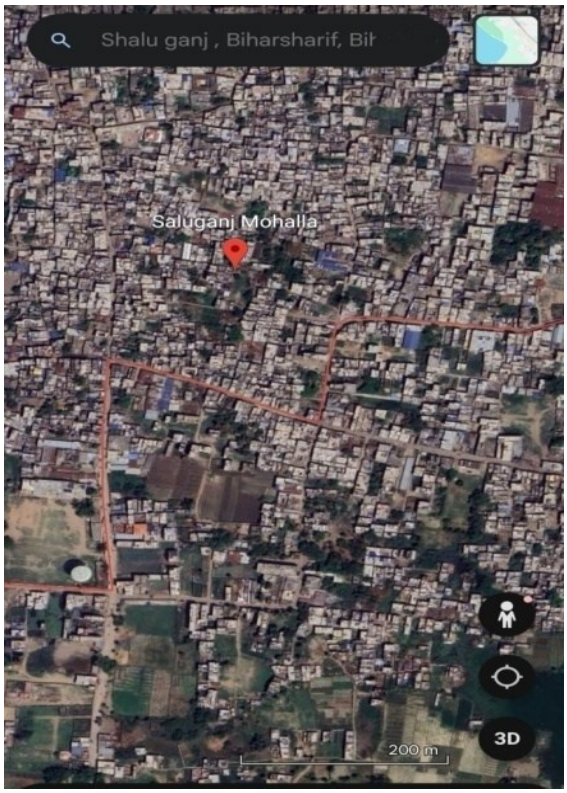
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Longitude – 85.523512°E
Latitude -25.196216°N



Address- Bharaopar Road, Biharsharif
Longitude – 85.536820°E
Latitude -25.191745°N



Address–Sohsarai, Road , Biharsharif
Longitude – 85.514602°N
Latitude -25.194023°E



Address - Saluganj Mohalla, Biharsharif
Longitude – 85.523549°E
Latitude -25.195762°N

CONNECTIVITY MAP OF BIHARSHARIF



Area In Biharsharif	Connectivity Insights
Pulpar	Centrally located, very close to Biharsharif railway station. Acts as hub connecting the main roads.
Saluganj Mohalla	Runs adjacent to Pulpar along Nawab Road, a bustling stretch with many shops and services.
Bharaopar	Located on national highway NH-33, bharaopar benefits from strong road connectivity both within the city and to other parts of bihar.
Sohsarai	The area connects to NH-31.

KEY MEDICINAL PLANTS TRADED IN BIHARSHARIF

Some of the most prominently traded medicinal plants in the Biharsharifinclude –

1.



Local Name – Amla
Scientific Name - *Phyllanthus emblica*
Family -Phyllanthaceae
Parts Used –Fruits, Seeds, Leaves, Bark
Price – 200/kg
Source – Marufganj, Patna City

Uses –

1. Amla is a power house of Vitamin C, a powerful antioxidant that helps strengthen the immune system.
2. It aids in digestion, prevents constipation, and improves gut health due to its fiber content.
3. Amla may help reduce cholesterol levels, blood pressure, and inflammation, thus supporting cardiovascular health.
4. Amla's antioxidant properties help protect skin from damage, promote collagen production, and may stimulate hair growth.
5. Amla can help regulate blood sugar levels, potentially benefiting individuals with diabetes.
6. It contains anti-inflammatory compounds that can help alleviate various inflammatory conditions.
7. Vitamin A in amla is important for maintaining good vision and may reduce the risk of age-related macular degeneration.
8. Improves vision and prevents age-related eye disorders such as macular degeneration.
9. Maintain heart health by balancing cholesterol levels.
10. Detoxifies the liver by flushing out harmful toxins from it and supports its healthy function.

2.



Local Name -Gurmar
Scientific Name – *Gymnema sylvestre*
Family - Apocynaceae
Parts Used – Leaves & root
Price -250/kg
Source – Rajgir

Uses –

1. Reduces sugar cravings by making sweet foods taste less appealing.
2. Suppresses swollen glands.
3. Helps lower blood sugar levels.
4. Contribute to favourable insulin levels by increasing insulin production.
5. Improves cholesterol and triglyceride levels, reducing heart disease risk.
6. Its extracts taken in the form of lozenges, mouthwash, or tea diminishes the consumption of sweet foods and overall caloric intake.
7. Gurmar's leaves and extracts have been used to treat eye diseases, allergies, constipation, cough, dental caries, obesity, stomach ailments, and viral infections.
8. Helps manage cholesterol and triglyceride levels.
9. Acts as an anti-obesity and anti-inflammatory agent.
10. Beneficial in herbal formulations for managing metabolic syndrome.

3.



Local Name - Chirayita
Scientific Name - *Swertia Chirayita*
Family - Gentianaceae
Parts Used – Whole plant (Especially stems & leaves)
Price – 220/kg
Source – Rajgir

Uses –

1. Acts as a powerful liver tonic and detoxifie, by promoting sweating and improving circulation.
2. Helps in treating fever, especially malarial and viral fevers.
3. Used to manage blood sugar levels in diabetes.
4. Possesses strong anti-inflammatory and antioxidant properties.
5. Useful in skin diseases like acne, eczema, and boils.
6. Used in treating intestinal worms and other parasites.
7. Beneficial in treating respiratory disorders like asthma and bronchitis.
8. Aids digestion and improves appetite.
9. Helps purify blood and remove toxins.
10. Supports immune system function.

4.

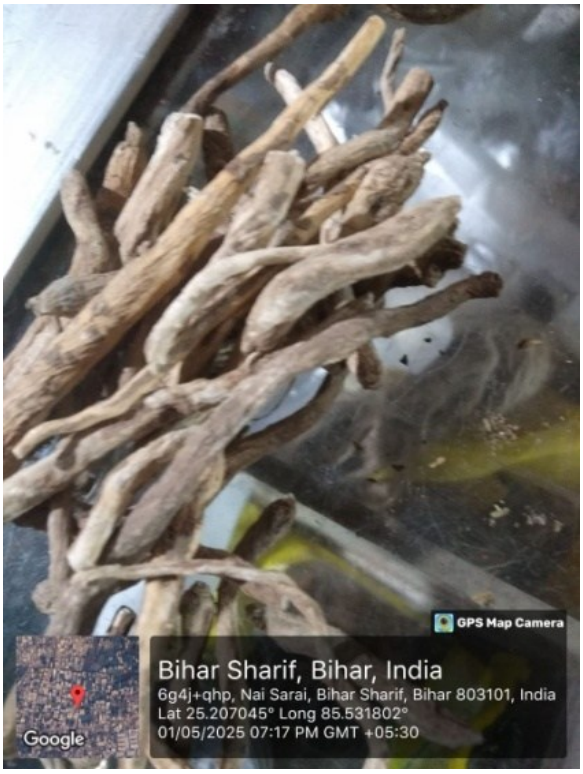


Local Name –Sonth/ Dry Ginger
Scientific Name - *Zingiber Officinalis Roscoe*
Family –Zingiberaceae
Parts Used – Dried Rhizome
Price -500/kg
Source – Marufganj, Patna City

Uses –

1. Improves digestion by stimulating digestive enzymes and reducing bloating and gas.
2. Relieves cold, cough, and sore throat due to its warming and expectorant properties.
3. Acts as a natural anti- inflammatory, helpful in reducing swelling and pain.
4. Treats nausea and vomiting, especially in pregnancy and motion sickness.
5. Boosts metabolism, aiding in weight management and fat burning.
6. Reduces joint pain and stiffness in arthritis and rheumatism through its heating effect.
7. Strengthens the immune system, helping the body fight infections and fatigue.
8. Clears respiratory congestion, making it effective in bronchitis and asthma.
9. Enhances appetite and is useful in loss of hunger and indigestion.
10. Detoxifies the body by promoting sweating and improving circulation.

5.



Local Name –Nagori Ashwagandha
Scientific Name - *Withania somnifera*
Family -Solanaceae
Parts Used –Roots, Leaves, fruits
Price – 700/kg
Source – Haridwar

Uses –

1. Acts as a powerful adaptogen, helping the body cope with stress and anxiety.
2. Enhances physical strength and stamina, often used by athletes and in Ayurvedic tonics.
3. Improves sleep quality and helps manage insomnia and restlessness.
4. Helps regulate hormones, especially beneficial for thyroid and adrenal glands.
5. Improves male fertility and libido, traditionally used as an aphrodisiac.
6. Stabilizes blood sugar levels, aiding in diabetes management.
7. Slows down aging and promotes vitality, making it a revered Rasayana in Ayurveda.
8. Boosts immunity and supports overall well-being.
9. Strengthens the nervous system, improving memory and concentration.
10. Reduces inflammation and joint pain, especially in arthritis.

6.



Local Name -Reetha
Scientific Name – *Sapindus mukorossi*
Family -Sapindaceae
Parts Used – Fruits, pericarp
Price -200/kg
Source – Marufganj, Patna City

Uses –

1. Natural hair cleanser, traditionally used as a Herbal shampoo to strengthen hair and prevent dandruff.
2. Anti-microbial and anti-fungal, effective in treating scalp infections and skin issues.
3. Used as a detergent substitute, especially for washing delicate fabrics and baby clothes.
4. Eco-friendly insect repellent, used in making natural pesticides.
5. Foaming agent in herbal cosmetics, due to high saponin content.
6. Used in traditional dental care, especially in tribal practices.
7. Cleansing and purifying agent, often used in rituals for detoxifying the body.
8. Remove lice and scalp irritation, due to its natural insecticidal properties.
9. Used in skin treatments for conditions like eczema and psoriasis.
10. Mild laxative when taken internally in controlled doses.

7.

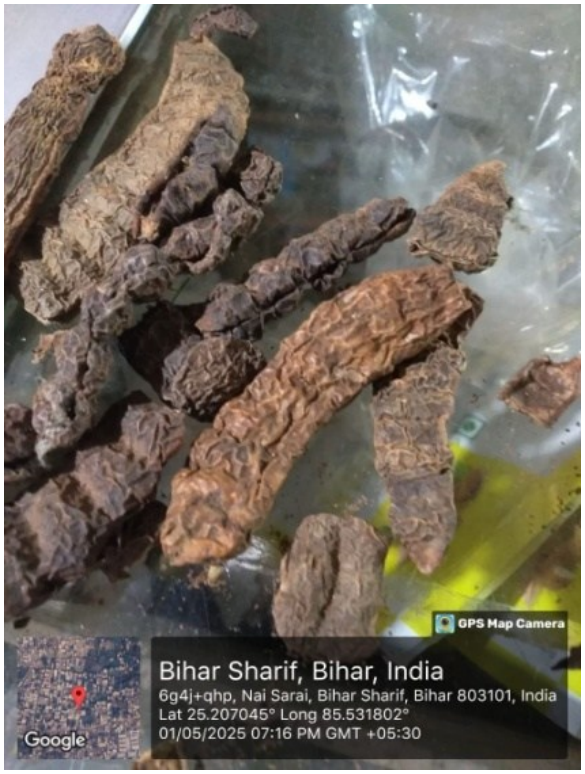


Local Name - Harre
Scientific Name - *Terminalia chebula*
Family - Combretaceae
Parts Used – Fruits, Pericarp
Price – Bari Harre (100/kg) Choti Harre (300/kg)
Source – Marufganj, Patna City

Uses –

1. Powerful digestive tonic, improves appetite and relieves constipation.
2. Acts as a mild laxative, gently cleanses the bowel without irritation.
3. Boosts immunity, widely used in the Ayurvedic formulation Triphala.
4. Supports respiratory health, effective in cough, asthma, and sore throat.
5. Promotes mental clarity, supports memory and brain function.
6. Useful in managing diabetes, helps in regulating blood sugar levels.
7. Acts as a rejuvenator, promotes longevity and vitality.
8. Used in eye and skin care, has anti-inflammatory and healing properties.
9. Detoxifies the body, removes accumulated toxins.
10. Balances all three doshas, that is Vata, Pitta, Kapha in Ayurveda.

8.



Local Name -Shikakai
Scientific Name - *Acacia concinna*
Family - Fabaceae
Parts Used – Pods, leaves, bark, roots
Price – 200/kg
Source – Haridwar

Uses –

1. Natural herbal shampoo, cleanses scalp gently without removing natural oils.
2. Prevents dandruff and scalp infections with its antimicrobial properties.
3. Detangles hair naturally, used as a conditioner in traditional hair care.
4. Used in Ayurvedic formulations for treating skin diseases and wounds.
5. Rich in vitamins A, C, D, E and K, which nourish hair and skin.
6. Eco-friendly alternative to chemical shampoos, biodegradable and non-toxic.
7. Balances scalp Ph, helping maintain healthy and shiny hair.
8. Strengthens hair roots and promotes hair growth.
9. Soothes itching and inflammation of the scalp.
10. Mild cleansing agent suitable for sensitive skin and children's hair.

9.

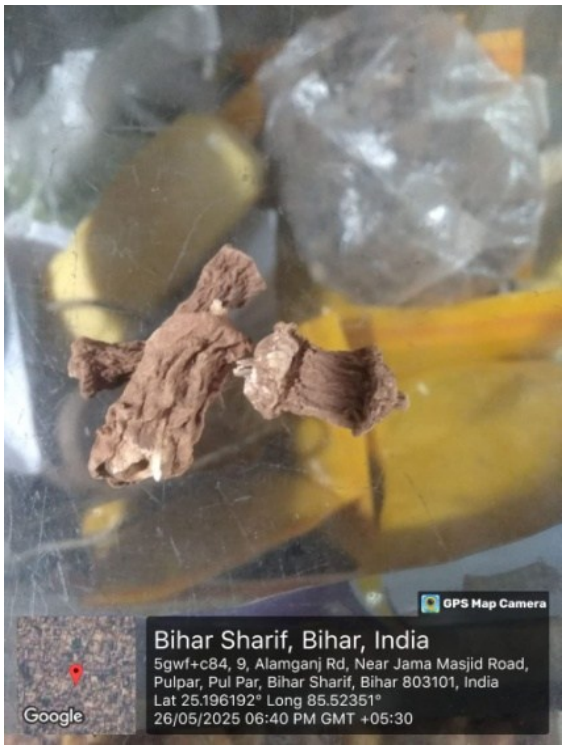


Local Name - Giloy
Scientific Name -*Tinospora cordifolia*
Family - Menispermaceae
Parts Used – stem, leaves,roots
Price – 180/kg
Source – Local Areas & Rajgir

Uses –

1. Giloy boosts the immune system and helps the body fight recurring infections.
2. It is widely used to reduce chronic and seasonal fevers like dengue and malaria.
3. Acts as a natural detoxifier that purifies the blood and removes toxins.
4. Helps regulate blood sugar levels and is used in managing type 2 diabetes.
5. Improves digestion, reduces acidity, and is beneficial in constipation.
6. Calms the mind and helps in managing stress, anxiety, and fatigue.
7. Supports respiratory health and is useful in asthma, cough, and cold.
8. Reduces fever, especially chronic and recurring fevers.
9. Adaptogenic herb, helps the body cope with physical and mental stress.
10. Effective against respiratory issues, including asthma and chronic cough.

10.



Local Name - Anantmool
Scientific Name –*Hemidesmus indicu*
Family - Apocynaceae
Parts Used– Root& root bark
Price – 500/kg
Source – Delhi

Uses–

1. Acts as a natural blood purifier, making it highly effective in treating chronic skin conditions such as acne, eczema, itching, and allergic rashes.
2. Has strong detoxifying and cooling properties, which help pacify excess pitta and heat-related disorders in the body like burning sensation and ulcers.
3. Enhances skin tone and complexion, hence traditionally used in Ayurvedic beauty formulations for proving natural glow and removing pigmentation.
4. Provides relief in urinary tract infections, burning micturition, and other urinary disorders due to its soothing and diuretic effects.
5. Strengthens the reproductive system in both males and females, used to improve fertility, libido, and manage hormonal imbalances.
6. Supports kidney and liver function, helping in the removal of toxins and improving overall metabolic processes.
7. Effective in arthritis and joint inflammation, due to its anti-inflammatory and cooling nature, reducing swelling and stiffness.
8. Strengthens reproductive system, used in infertility and debility.
9. Used in treating chronic cough and respiratory issues.
10. Promotes overall vitality, used as a rejuvenating.

11.



Local Name - Tikhur
Scientific Name - *Curcuma angustifolia*
Family - zingiberaceae
Parts Used – Rhizome& Powdered starch
Price – 250/kg
Source –Jharkhand

Uses –

1. Highly nutritious cooling agent, traditionally used to treat excessive body heat, acidity, and burning sensation during summer.
2. Easily digestible and soothing, widely given to infants, elderly, and patients recovering from chronic illness for strength and nourishment.
3. Used in diarrhea and dysentery, as its starch has a natural binding and cooling effect on the intestines.
4. Promotes lactation in nursing mothers, and is considered a galactagogue in traditional tribal and Ayurvedic systems.
5. Used to treat urinary tract infections and burning urination, due to its coolant and detoxifying action.
6. Non-allergenic and gluten-free, Tikhur starch is used as a dietary substitute for people with gluten intolerance or digestive disorders.
7. Acts as a natural energy booster, often consumed as a sweet preparation, during fasts.
8. Beneficial for managing weakness, fatigue, and debility, especially after fever.
9. Applied externally in paste form to reduce skin inflammation, rashes, and boils.
10. Used in traditional tribal medicine, as a health restorative.

12.



Local Name - Mithabach
Scientific Name - *Acorus calamus*
Family- Acoraceae
Parts Used – Rhizome & Essential oil
Price – 800/kg
Source – Delhi

Uses–

1. Highly effective brain tonic, improves memory, speech clarity, and cognitive function, especially in children.
2. Used to treat speech delay and stammering, often given with honey to enhance verbal development in infants.
3. Acts as a digestive stimulant, relieving gas, bloating, and indigestion through its carminative properties.
4. Used in respiratory ailments, especially in managing cold, cough, and asthma due to its warming and mucolytic effect.
5. Works as a mild sedative, helpful in improving sleep and reducing mental restlessness.
6. Applied externally as a paste or oil, to relieve joint pain, swelling, and skin infections.
7. Has insecticidal and antimicrobial properties, used in traditional medicine for wound healing and skin hygiene.
8. Calms the nervous system, used in epilepsy, hysteria, and anxiety.
9. Used in oral health, as it prevents bad breath and strengthens gums.
10. Often burned as dhoop for mental peace and environment cleansing.

13.



Local Name – Safed Musli
Scientific Name - *Chlorophytum borivilianum*
Family - Asparagaceae
Parts Used – Tuberous Roots & Seeds
Price – 3000/kg
Source – Panipath

Uses–

1. Strengthens reproductive system in both males and females, helpful in hormonal balance and improving sperm quality.
2. Boosts immunity and body resistance, especially after chronic illness or fatigue.
3. Used to treat erectile dysfunction and premature ejaculation, as part of classical and modern herbal formulations.
4. Improves muscle strength and endurance, often used by athletes and in natural bodybuilding supplements.
5. Helps manage diabetes, by supporting glucose metabolism and reducing weakness associated with it.
6. Acts as an anti-inflammatory agent, helpful in arthritis and general body pain.
7. Used in general weakness, anemia, and debility, due to its high nutritional and adaptogenic value.
8. Renowned aphrodisiac and sexual tonic, used to improve male fertility, libido, and strength.
9. Acts as a powerful Rasayana, promoting overall vitality, stamina, and longevity.
10. Used in traditional preparations to regain strength after delivery.

14.



Local Name –Paan ka jari
Scientific Name - *Piperbetle*
Family - Piperaceae
Parts Used – Leaves, Roots & Stems
Price – 1600/kg
Source –Rajgir

Uses –

1. Traditionally used for respiratory problems, especially in asthma and chronic cough, due to its warming nature.
2. Acts as a mild digestive stimulant, roots are chewed or used in decoctions to relieve indigestion and gas.
3. Used in urinary tract disorders, where its decoction is believed to reduce burning urination.
4. In tribal medicine, the root is used in treating snake bites and insect stings, often crushed and applied externally.
5. Anti-inflammatory and antibacterial, helps in managing minor skin infections when used as paste.
6. Used in postpartum care, especially in some eastern Indian traditions, as a part of herbal formulations.
7. Acts as a mild aphrodisiac, according to folk medicine when used with other herbs.
8. Roots sometimes boiled with milk and given in certain traditional practices to increase body warmth and vitality.
9. Helps relieve headaches when applied as a warm poultice on the forehead.
10. Acts as a natural mouth freshener with mild antibacterial properties.

15.



Local Name – B-dhara
Scientific Name-*Argyreia nervosa*
Family - Lamiaceae
Parts Used – Roots, stem
Price – 700/kg
Source – Marufganj, Patna City

Uses –

1. Excellent for respiratory disorders, especially asthma, bronchitis, and chronic cough due to its expectorant properties.

2. Acts as a strong anti-inflammatory agent, beneficial in treating arthritis and joint pain.

3. Traditionally used in fever and flu, especially during seasonal viral infections.

4. Promotes wound healing, roots and leaves are used externally to treat wounds and skin infections.

5. Helpful in detoxification, often used in Ayurvedic decoctions for cleansing blood and lymph.

6. Supports liver health, used in formulations for jaundice and hepatic disorders.

7. Reduces swelling and lymph node enlargement, especially in traditional rural therapies.

8. Acts as a diuretic and is used to treat urinary tract infections.

9. Decoction of the plant is used to dissolve kidney and bladder stones.

10. Helps in relieving body pain and muscle cramps.

16.



Local Name – Babul Gondh
Scientific Name - *Acacia Nilotica*
Family - Fabaceae
Parts Used – Gum/exudate
Price – 450/kg
Source – Delhi

Uses –

1. Works as a natural body coolant, used in summer drink to relieve internal heat.
2. Strengthens bones and joints, especially beneficial for women post-delivery or during menopause.
3. Boosts stamina and energy, commonly used in traditional laddoos for strength.
4. Supports digestive health, soothes the stomach lining and reduces acidity.
5. Used in cough and throat infections, as it helps reduce throat irritation and acts as a demulcent.
6. Aids in wound healing, due to its antibacterial and astringent properties when applied externally.
7. Improves skin elasticity and glow, used in traditional face packs and herbal cosmetics.
8. Beneficial in reducing excessive bleeding and inflammation.
9. Helps in controlling excessive sweating and body odor.
10. Acts as a natural thickener in sweets and herbal preparations.

17.

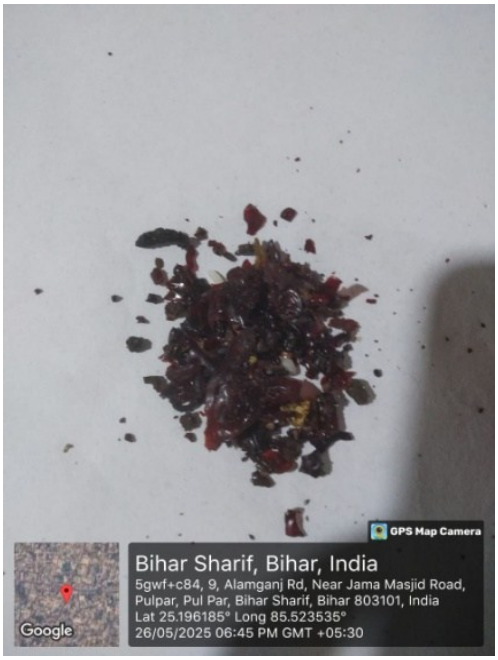


Local Name – Taal Makhana
Scientific Name – *Euryale Ferox*
Family - Nymphaeaceae
Parts Used – Seeds
Price – 400/kg
Source – Marufganj, Patna City

Uses –

1. Highly nutritious superfood, rich in protein, calcium, and antioxidants – used in Ayurvedic diets.
2. Strengthens kidneys and reproductive organs, used in traditional formulations for male and female vitality.
3. Supports heart health, helps regulate blood pressure and cholesterol due to low sodium and high potassium.
4. Used in diabetes management, as it has a low glycemic index and helps stabilize blood sugar levels.
5. Promotes weight loss, being low in calories and high in fiber, it keeps one full for longer.
6. Helps in insomnia, when taken with warm milk, it calms the mind and improves sleep quality.
7. Aids in diarrhea and digestive issues, its astringent nature reduces bowel looseness.
8. Supports kidney health and helps in detoxifying the body.
9. Improves heart function by regulating blood pressure and cholesterol levels.
10. Strengthens bones and joints due to its rich calcium and phosphorus content.

18.



Local Name - Kubarkoni
Scientific Name - *Justicia Adhatoda*
Family – Xanthium Strumarium
Parts Used – Gum/ exudate
Price – 700/kg
Source – Marufganj, Patna City

Uses –

1. Effective in skin diseases like eczema and psoriasis, leaves are crushed and applied externally.
2. Used to treat chronic cough and asthma, decoction of plant acts as expectorant.
3. Helps in controlling fever and malaria, especially in tribal medicine using root decoction.
4. Seeds used in treating urinary infections, traditionally believed to flush out toxins.
5. Relieves joint pain and arthritis, paste made from plant parts applied externally.
6. Considered useful in piles and stomach disorders, seed powder taken with warm water.
7. Detoxifies blood, often used in traditional cleansing therapies.
8. Supports healthy digestion and relieves mild constipation.
9. Improves stamina and physical strength when consumed regularly in moderate amounts.
10. Enhances skin health by reducing dryness and promoting natural glow.

19.



Local Name- Chatila
Scientific Name - *Cassia Tora*
Family – Fabaceae
Parts Used – Leaves, Roots
Price – 700/kg
Source – Rajgir

Uses –

1. Used in treatment of skin diseases, especially fungal infections and eczema – paste of leaves applied externally.

2. Seeds act as mild laxative, useful in relieving constipation and detoxifying intestines.

3. Leaves used in diabetes management, believed to reduce blood sugar when taken as decoction.

4. Effective in ringworm and itching, crushed leaves applied on affected area.

5. Used in eye disorders, seed powder sometimes used externally in folk medicine for conjunctivitis.

6. Helps in liver-related ailments, especially in tribal remedies for jaundice.

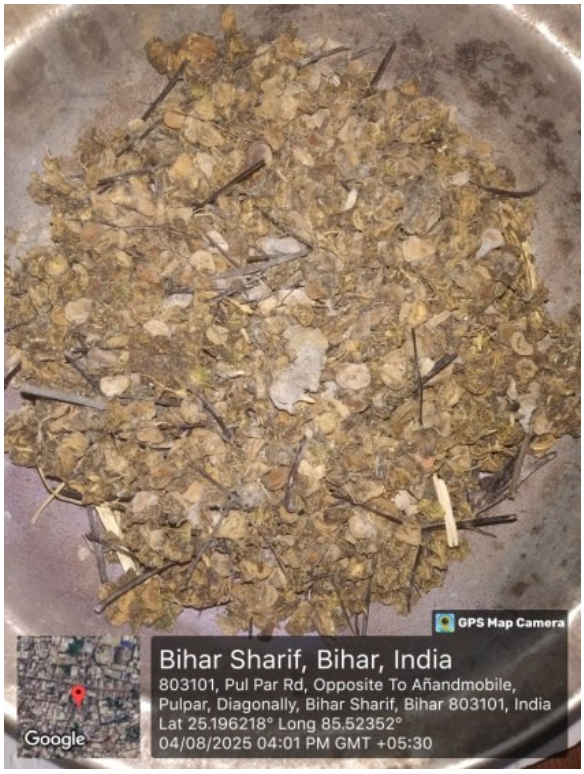
7. Improves digestion and appetite, when taken in low doses with food.

8. Helps in reducing fever and body heat when prepared as a herbal decoction.

9. Supports healthy liver function and aids in detoxification.

10. Reduces skin inflammation and itching when applied as a paste or wash.

20.



Local Name – Dhatura Bia
Scientific Name - *Datura Metel*
Family – Solanaceae
Parts Used – Seeds, Leaves
Price - 400/kg
Source – Local Area, Rajgir & Marufganj

❖ ***Uses*** **–**

1. Helpful in asthma and bronchitis, smoke from dried seeds/leaves inhaled in minute quantity.
2. Applied externally in arthritis and joint swelling, seed paste used in medicated oil.
3. Traditional use in toothache, oil prepared with seeds used to relieve dental pain.
4. Acts as sedative and antispasmodic, used under clinical conditions in extreme nervous conditions.
5. Part of tantric and tribal rituals, believed to have spiritual and psychoactive properties.
6. Used in veterinary folk medicine, in tiny quantities for external parasite control.
7. Applied to snake bites and scorpion sting, externally only in tribal practices.
8. Helps relieve severe Asthma symptoms when used in small, controlled doses in traditional medicine.
9. Used in Ayurvedic formulations for treating skin disorders like eczema and boils.
10. Acts as an effective anti-inflammatory agent in external poultices for swelling and injuries.

21.



Local Name – Gaav
Scientific Name -*Semecarpus Anacardium*
Family – Anacardiaceae
Parts Used – Seeds, Fruit, Bark
Price – 200/kg
Source – Kauaakol (Nawada)

❖ ***Uses*** **–**

1. It acts as a digestive stimulant, helping in treating indigestion, flatulence, and chronic constipation.
2. It is applied externally, after purification to manage eczema, scabies, ringworm, and other skin infections due to its antimicrobial and anti-fungal properties.
3. The nut is traditionally used in treating bleeding and non-bleeding piles and fistula due to its strong astringent and cleansing action.
4. It helps in reducing chronic cough, asthma, bronchitis, and respiratory congestion by acting as a bronchodilator and expectorant.
5. It strengthens immunity, increases vitality, and supports overall well-being when taken in prescribed doses.
6. It acts as a nervine tonic, useful in conditions like anxiety, memory weakness, and nervous debility.
7. Preliminary studies suggest that extracts of Seme carpus anacardium may have cytotoxic and anti-cancer effects due to its antioxidant and immune-modulating properties.
8. Helps reduce mild fevers and supports faster recovery from seasonal illnesses.
9. Strengthens the immune system and protects against common infections.
10. Promotes healthy skin by reducing rashes and irritation.

22.



Local Name – Laal Jari
Scientific Name - *Celosia Argentea*
Family – Amaranthaceae
Parts Used – Root
Price – 1500/kg
Source – Delhi

Uses –

1. Helps control internal bleeding such as in piles, nosebleeds, and heavy menstrual flow.
2. Useful in treating diarrhea and dysentery by calming the digestive system.
3. Applied for relief in eye infections, redness, and irritation.
4. Supports liver health by aiding in detoxification and cleansing.
5. Reduces body inflammation and helps in wound healing.
6. Provides relief from pain and swelling in piles and anal fissures.
7. Works as a natural tonic to boost energy and recover from weakness.
8. Improves blood circulation, which supports heart health.
9. Acts as a mild stress reliever and improves sleep quality.
10. Supports faster muscle recovery after physical work or exercise.

23.



Local Name – Nagar Motha
Scientific Name - *Cyperus Rotundus*
Family – Cyperaceae
Parts Used – Rhizome/tuber
Price – 400/kg
Source – Panipath

Uses –

1. Improves digestion and helps relieve gas, bloating, and stomach pain.
2. Reduces fever and is used traditionally as an antipyretic herb.
3. Acts as a natural blood purifier and helps in managing skin disorders.
4. Useful in treating diarrhea and indigestion in both children and adults.
5. Strengthens liver function and aids in detoxifying the body.
6. Regulates menstrual cycle and reduces menstrual cramps.
7. Acts as a mild pain reliever and reduces inflammation in the body.
8. Works as a natural coolant and reduces excessive thirst.
9. Applied externally to heal wounds and skin infections.
10. Used in traditional formulations for weight management.

24.



Local Name – Kochla
Scientific Name - *Mucuna Pruriens*
Family – Loganiaceae
Parts Used – Seeds, bark
Price – 600/kg
Source – Delhi

Uses –

1. Increases appetite and improves digestion when properly purified.
2. Acts as a nerve tonic and is used in treating nervous disorders.
3. Helps in conditions like paralysis and muscle weakness.
4. Used to relieve joint pain and inflammation.
5. Stimulates heart function and improves blood circulation.
6. Aids in sexual weakness and boosts vitality in men.
7. Used in Ayurvedic formulations after proper purification, as raw seeds are toxic.
8. Supports male reproductive health by improving sperm count and motility.
9. Acts as a natural source of L-DOPA, helping in the management of Parkinson's disease symptoms.
10. Enhances mood and reduces stress by supporting dopamine production.

25.



Local Name – Galeha
Scientific Name – *Buchanania Lanzan*
Family – Anacardiaceae
Parts Used – Seed, Bark, Gum
Price – 350/kg
Source – Delhi

Uses –

1. Seeds are used in traditional medicine to treat joint pain and inflammation.
2. Powdered seed or extract is taken to relieve urinary tract infections and burning urination.
3. Acts as a natural coolant during summer, reduces internal body heat.
4. Helps in managing constipation due to mild laxative properties.
5. Used in rural remedies to control blood sugar in early-stage diabetes.
6. Applied externally for skin conditions like itching, rashes, or swelling.
7. Known to strengthen nerves and improve general physical weakness.
8. Helps in breaking down kidney stones and preventing their recurrence.
9. Acts as a mild diuretic, aiding in the elimination of excess fluids.
10. Supports urinary tract health and prevents infections.

26.



Local Name – Daaru Haldi
Scientific Name – *Curcuma Aromatica*
Family – Zingiberaceae
Parts Used – Root, root bark
Price – 700/kg
Source – Haridwar

Uses–

1. Widely used for skin diseases and beauty treatments, especially for glowing skin.
2. Acts as a natural antiseptic, used for healing cuts, wounds, and infections.
3. Applied externally to reduce swelling, pain, and inflammation in joints or muscles.
4. Beneficial in women's health, used post-delivery to improve internal healing.
5. Known to purify blood and improve complexion when taken in controlled doses.
6. Used in traditional bathing powders and herbal cosmetics.
7. Sometimes mixed with honey or milk to treat cough and throat infections.
8. Helps in managing jaundice and other liver-related disorders.
9. Supports eye health and reduce redness or irritation.
10. Promotes wound healing and prevents skin infections.

27.

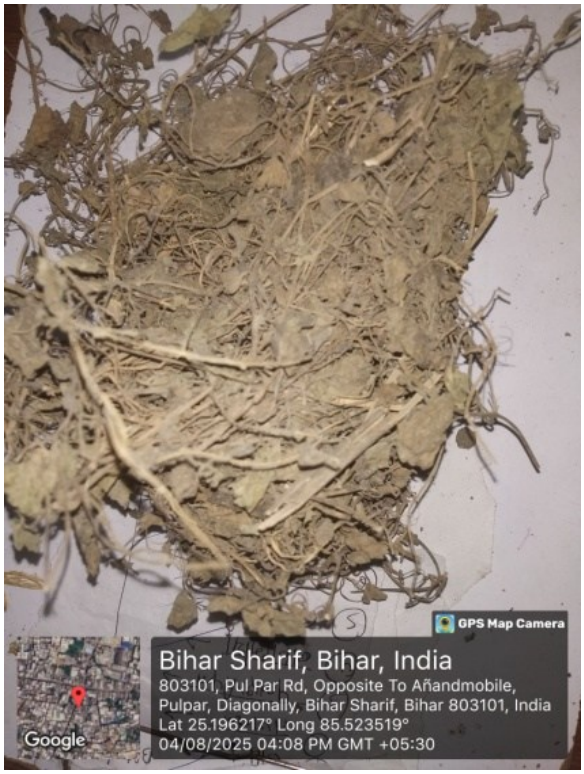


Local Name – Sankusti
Scientific Name - *Costus Speciosus*
Family – Costaceae
Parts Used – Whole plant
Price – 300/kg
Source – Rajgir

Uses –

1. Used to control blood sugar levels in traditional diabetic remedies.
2. Provides relief from cough, asthma, and bronchitis.
3. Improves digestion and helps in treating constipation and gas.
4. Reduces joint pain and swelling when applied as a paste.
5. Useful in urinary tract infections and promotes urinary health.
6. Acts as a natural liver detoxifier and supports liver function.
7. Heals skin rashes, boils, and other minor skin conditions.
8. Improves appetite and nutrient absorption.
9. Supports overall vitality and energy levels.
10. Acts as natural expectorant, clearing mucus from the respiratory tract.

28.



Local Name – Brahmii
Scientific Name - *Bacopa Monnieri*
Family – Plantaginaceae
Parts Used – Whole Plant (mostly leaves & stems)
Price -250/kg
Source – Rajgir, Marufganj

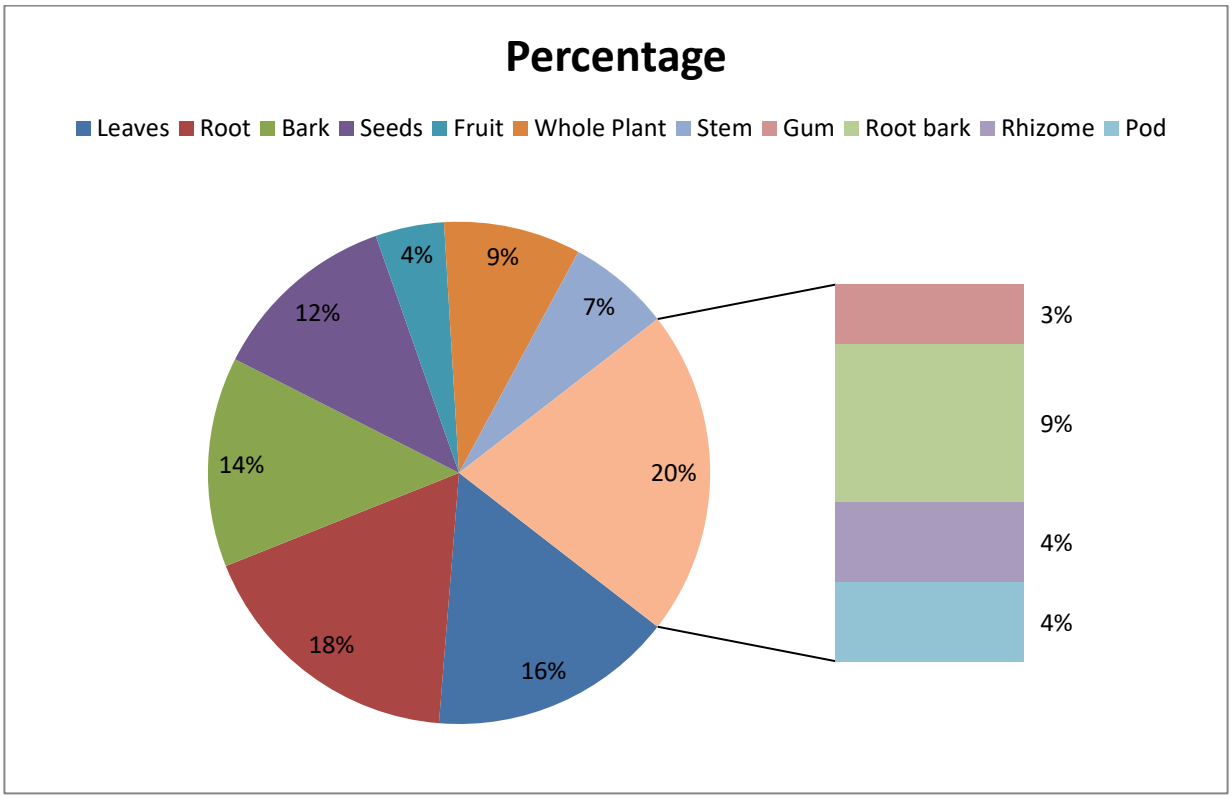
❖ ***Uses*** **–**

1. Enhances memory, concentration, and cognitive functions.
2. Reduces stress, anxiety, and mental fatigue.
3. Acts as a brain tonic and supports nervous system health.
4. Helps in managing symptoms of insomnia and depression.
5. Improves learning ability and alertness in children and adults.
6. Supports recovery after strokes or nervous disorders.
7. Has antioxidant and anti-inflammatory properties for overall wellness.
8. Improves blood circulation in the brain, enhancing cognitive performance.
9. Supports overall vitality and reduces fatigue caused by mental overwork.
10. Helps in controlling epileptic episodes, when used under medical guidance.

ETHNOBOTANICAL CHART – PARTS USED

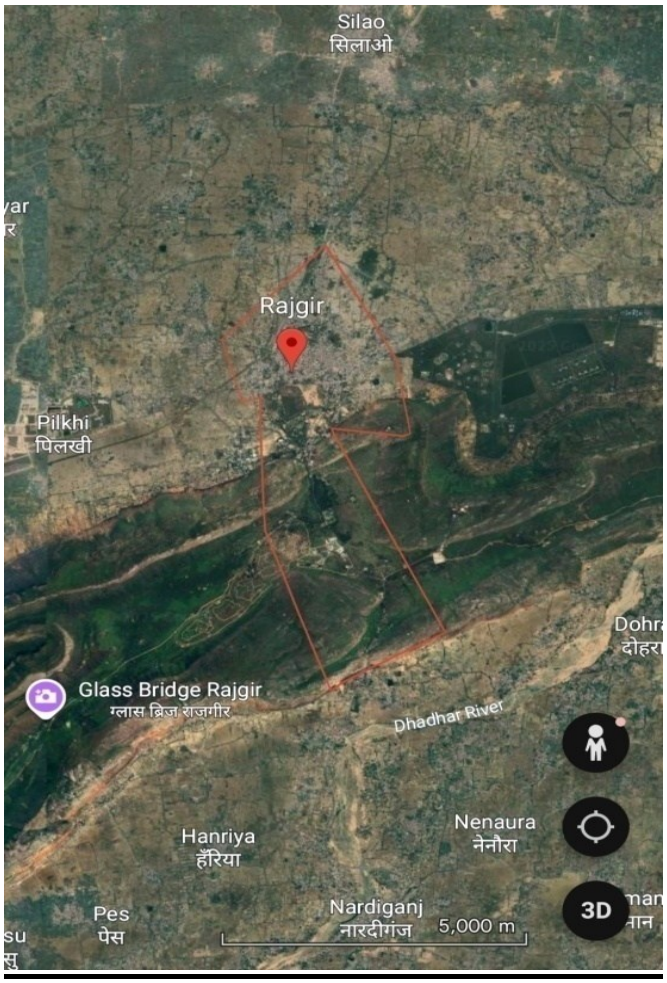
S.No.	Local Name	Parts Used
1.	Aamla	Fruit, seeds, leaves, bark
2.	Gurmar	Leaves, root
3.	Chirayita	Whole plant
4.	Sotth	Dried rhizome
5.	NagoriAswgandha	Root, leaves, fruits
6.	Reetha	Fruit pericarp
7.	Harre	Fruit pericarp
8.	Shikakai	Pod, bark, leaves
9.	Giloy	Stem,leaves, root
10.	Anantmul	Root, root bark
11.	Tikhur	Rhizome/tuber starch
12.	Mitha bach	Rhizome
13.	Safed musli	Tuberous roots
14.	Paan ka jari	Leaves
15.	B-dhara	Fruit
16.	Babul Gondh	Gum
17.	Taal Makhana	Seeds
18.	Kubarkoni	Gum
19.	Chatila	Leaves, roots
20.	Dhatura Bia	Seeds
21.	Gaav	Seeds, fruit, bark
22.	Laal Jari	Root
23.	Nagar Motha	Rhizome/ Tuber
24.	Kochla	Seeds, bark

25.	Galeha	Seeds, bark, gum
26.	Daaru Haldi	Root, root bark
27.	Sankusti	Whole plant
28.	Brahmii	Whole aerial plant



The Ethnobotanical analysis of 28 medicinal plants revealed a clear dominance of vegetative parts in traditional applications. Leaves and roots stand out as the primary materials collected, valued for their medicinal potency, and ease of harvesting. Bark, too, occupies a central role, often harvested from mature plants for its concentrated bioactive compounds. Seeds form another significant category, especially in remedies where oils, powders, or decoctions are required.

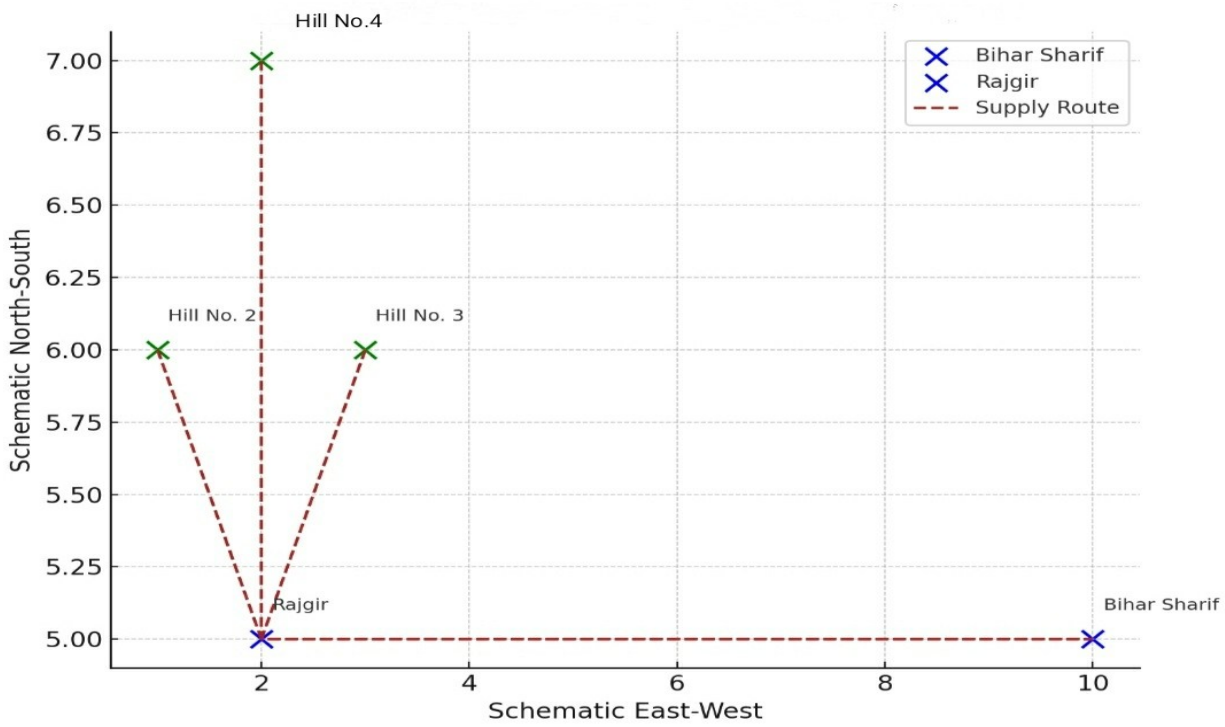
ADJOINING AREA – RAJGIR



Address– Rajgir
District – Nalanda
Pin Code – 803116
Longitude - 25.0305°N,
Latitude - 85.4201° E

Rajgir, located about 15 km from Biharsharif, is not only a site of historical and religious importance but also a natural resource hub for medicinal plant production in the Nalanda district. Surrounded by low hills, forest patches, and rural villages, Rajgir's geography and biodiversity make it an important contributor to the herbal trade network of Biharsharif. In Rajgir, the forested hills are classified into different zones by the Forest Department for management and resource monitoring purposes. Among these, Hill Number 4, Hill Number 3, and Hill Number 2 are the most significant from the perspective of medicinal plant collection. Most herbs here are collected from natural habitats rather than cultivated.

MEDICINAL PLANT COLLECTION ZONES- RAJGIR HILLS TO BIHARSHARIF



The Rajgir Hills are rich in biodiversity and serve as an important source of medicinal plants. Local communities collect different species from these Hills zones and bring them to Rajgir, which acts as the primary aggregation hub. From Rajgir, the collected materials are supplied to Biharsharif, and other places. The given schematic map illustrates this collection and supply chain in a simplified form.

1. Hill No.4- Ratnagiri Hill

Ratnagiri – "Hill of Jewels" is historically linked to Buddhist and Jain traditions. Ancient monastic remains and cave sites are found here. Dense forest cover with high moisture retention supports a wide range of medicinal climbers such as Giloy and shade loving herbs like Bhang, Balam kheera are found here.

2. Hill No.3-Vipulagiri Hill

Vipulagiri is mentioned in Buddhist records as a center for meditation and monastic life. Mixed herbs, small trees, Seasonal herbs like Chirayita and root-based species are common here.

3. Hill No.2- Vaibhagiri Hill

Vaibhagiri – "Hill of prosperity" is associated with Lord Buddha and Lord Mahavira, contains historical caves and heritage sites. Hosts fruit bearing medicinal trees including, Neem, Jamun, Arjun, Peepal, Babool, etc.

These three hills together supply the majority of wild-collected medicinal plants from Rajgir to Biharsharif and other places. The forest micro-climate in these zones supports species diversity and seasonal growth patterns. Collection is carried out primarily by local villagers and small-scale gatherers, who have generational knowledge of plant locations and harvesting techniques.

1.

Supplies herbs like



Local Name – Arjun Chaal
Scientific Name - *Terminalia Arjuna*
Family – Combretaceae
Parts Used – Bark
Price – 200/kg

Uses –

1. Strengthens heart muscles and is highly beneficial in managing heart diseases.
2. Helps regulate blood pressure and improves blood circulation.
3. Acts as a natural remedy for chest pain, palpitations, and irregular heartbeat.
4. Has antioxidant properties that protect against cell damage and aging.
5. Useful in reducing cholesterol and maintaining lipid balance in the body.
6. Aids in healing wounds and ulcers due to its anti-inflammatory properties.
7. Supports overall cardiovascular health and endurance.
8. Provides relief in angina pain, palpitations, and irregular heartbeat.
9. Supports faster recovery from heart surgeries or chronic heart conditions.
10. Traditionally used to improve stamina, endurance, and overall vitality.

2.



Local Name – Peepal ka Pokha
Scientific Name - *Ficus religiosa*
Family – Moraceae
Parts Used – Bark, Leaves, Fruits, Roots
Price -200/kg

Uses –

1. Strengthens immunity and promotes overall health through its medicinal compounds.
2. Helpful in controlling excessive bleeding disorders and skin ailments.
3. Improves digestion and helps relieve constipation and gastric problems.
4. Traditionally used in respiratory issues like asthma, cough, and cold.
5. Supports healthy blood sugar levels in diabetic patients.
6. Works as a natural cooling agent, reducing body heat and inflammation.
7. Useful in managing urinary problems and kidney-related discomfort.
8. Applied externally for wound healing and reducing swelling.
9. Promotes mental calmness and helps in stress and anxiety relief.
10. Used in Ayurveda for improving fertility and reproductive health.

3.



Local Name – Jamun Beej
Scientific Name - *SyzygiumCumini*
Family – Myrtaceae
Parts Used – Seeds
Price -200/kg

Uses –

1. Helps maintain healthy blood sugar levels, especially in diabetic patients.

2. Improves digestion and reduces excessive thirst and frequent urination.

3. Supports liver health and aids in natural detoxification.

4. Used in controlling diarrhea, dysentery, and stomach infections.

5. Acts as a natural blood purifier, enhancing skin clarity and glow.

6. Strengthens gums and teeth, reducing mouth ulcers.

7. Enhances immunity and protects against bacterial and fungal infections.

8. Helps in managing urinary tract disorders and kidney-related problems.

9. Reduces weakness and fatigue by improving nutrient absorption.

10. Traditionally used in Ayurveda to balance Kapha and Pitta doshas.

4.



Local Name – Neem Beej
Scientific Name - *Azadirachta indica*
Family – Meliaceae
Parts Used – Seeds
Price -200/kg

Uses –

1. Acts as a natural insecticide and pesticide in agriculture.

2. Helps treat skin disorders like eczema, psoriasis, and acne.

3. Supports healthy hair growth and reduces dandruff.

4. Purifies blood and improves overall skin health.

5. Strengthens immunity and protects against infections.

6. Used in the treatment of intestinal worms and parasites.

7. Supports liver health and aids in detoxification.

8. Reduces inflammation and promotes wound healing.

9. Beneficial in managing diabetes by regulating blood sugar.

10. Helps in oral health by preventing gum disease and tooth decay.

5.



Local Name – Gondh Katila
Scientific Name – *Astragalus Gummifer*
Family – Fabaceae
Parts Used – Gum
Price -600/kg

Uses –

1. Acts as a natural coolant and reduces body heat during summer.

2. Helps in relieving constipation by acting as a mild laxative.

3. Soothes urinary tract irritation and burning sensation.

4. Supports skin health by reducing wrinkles and fine lines.

5. Aids in weight gain when taken with milk or other nutritive foods.

6. Provides relief from cough and respiratory irritation.

7. Strengthens bones and joints by providing natural calcium.

8. Acts as an energy booster for recovery after illness.

9. Used in traditional sweets and beverages for texture and cooling effect.

10. Helps in reducing inflammation in the digestive tract.

6.



Local Name – Bhaang
Scientific Name - *Cannabis Sativa*
Family – Cannabaceae
Parts Used – Leaves, Seeds, Flowers
Price -200/kg

Uses –

1. Helps reduce stress, anxiety, and promote relaxation.
2. Improves appetite in cases of weakness or illness.
3. Acts as an analgesic for joint pain and inflammation.
4. Used in making cooling drinks like thandai during festivals.
5. Supports digestive health when taken in small quantities.
6. Helps manage insomnia by promoting better sleep.
7. Used in traditional remedies for muscle spasms.
8. Seeds are rich in protein and healthy fats.
9. Supports cardiovascular health by improving blood circulation.
10. Acts as a natural remedy for nausea and vomiting.

7.



Local Name – Gurmar
Scientific Name - *Gymnema Sylvestre*
Family – Apocynaceae
Parts Used – Leaves
Price -300/kg

Uses –

1. Helps regulate blood sugar levels in diabetic patients.

2. Reduces sugar cravings by suppressing the taste of sweetness.

3. Supports healthy insulin production.

4. Aids in weight management by controlling appetite.

5. Improves cholesterol and triglyceride levels.

6. Supports liver health and detoxification.

7. Enhances digestion and nutrient absorption.

8. Helps in reducing inflammation in the body.

9. Supports heart health by improving lipid profile.

10. Acts as a natural remedy for urinary tract problems.

8.



Local Name – Chirayta
Scientific Name – *Swertia Chirayita*
Family – Gentianaceae
Parts Used – Whole Plant (mainly stems & leaves)
Price -180/kg

Uses –

1. Acts as a natural blood purifier, removing toxins from the body.

2. Helps in treating fever and malaria.

3. Supports liver health and treats jaundice.

4. Improves digestion and relieves constipation.

5. Useful in managing skin diseases like acne and eczema.

6. Boosts immunity and fights infections.

7. Reduces inflammation and joint pain.

8. Supports treatment of anemia by improving hemoglobin levels.

9. Helps control high blood sugar in diabetes.

10. Acts as a mild laxative and improves bowel movement.

9.



Local Name – Balam Kheera
Scientific Name - *Cucumis melo var. agrestis*
Family – Cucurbitaceae
Parts Used – Fruits, seeds, root
Price -1000/kg

Uses –

1. Acts as a natural coolant for the body in summer.
2. Helps in treating fever and excessive thirst.
3. Supports digestive health and relieves constipation.
4. Useful in urinary tract infections.
5. Helps reduce inflammation in the stomach and intestines.
6. Promotes kidney health and acts as a mild diuretic.
7. Reduces acidity and soothes gastric irritation.
8. Seeds are beneficial for removing intestinal worms.
9. Supports recovery from weakness and fatigue.
10. Helps in balancing body heat during pitta-related disorders.

10.



Local Name – Babul Ka Fal
Scientific Name - *Vachellia nilotica*
Family – Fabaceae
Parts Used – Pods, seeds, fruit pulp
Price -200/kg

Uses –

1. Helps in treating diarrhea and dysentery.

2. Acts as a natural remedy for cough and sore throat.

3. Supports oral health and strengthens gums.

4. Useful in reducing inflammation and swelling.

5. Aids in wound healing due to its antimicrobial properties.

6. Helps control blood sugar levels.

7. Improves digestion and relieves stomach discomfort.

8. Supports joint health and reduces pain in arthritis.

9. Works as a natural astringent for skin issues.

10. Promotes kidney health and urinary tract function.

11.



Local Name – Bel Guda
Scientific Name - *Aeglemarmelos*
Family – Rutaceae
Parts Used – Fruit pulp, Seeds
Price -200/kg

Uses –

1. Treats diarrhea, dysentery, and other digestive issues.

2. Improves appetite and strengthens the digestive system.

3. Acts as a natural coolant for the body in summer.

4. Helps in managing ulcers and acidity.

5. Provides relief in chronic constipation.

6. Boosts immunity and protects against infections.

7. Supports heart health by reducing cholesterol levels.

8. Helps control blood sugar in diabetic patients.

9. Acts as a natural energy booster.

10. Provides antioxidants that protect body cells.

12.



Local Name – Redi
Scientific Name – *Jatropha Gossypiifolia*
Family – Euphorbiaceae
Parts Used – Leaves, seeds, latex roots
Price -800/kg

Uses –

1. Leaves are applied to reduce swelling, inflammation, and joint pain.

2. Latex is used traditionally for wound healing and skin infections.

3. Seed oil is used externally to relieve pain and stiffness.

4. Root decoction is taken in small quantities for digestive problems

5. Acts as a traditional remedy for arthritis and rheumatic pain.

6. Leaf paste is used for treating boils and skin eruptions.

7. Crushed leaves are applied to stop bleeding from minor cuts.

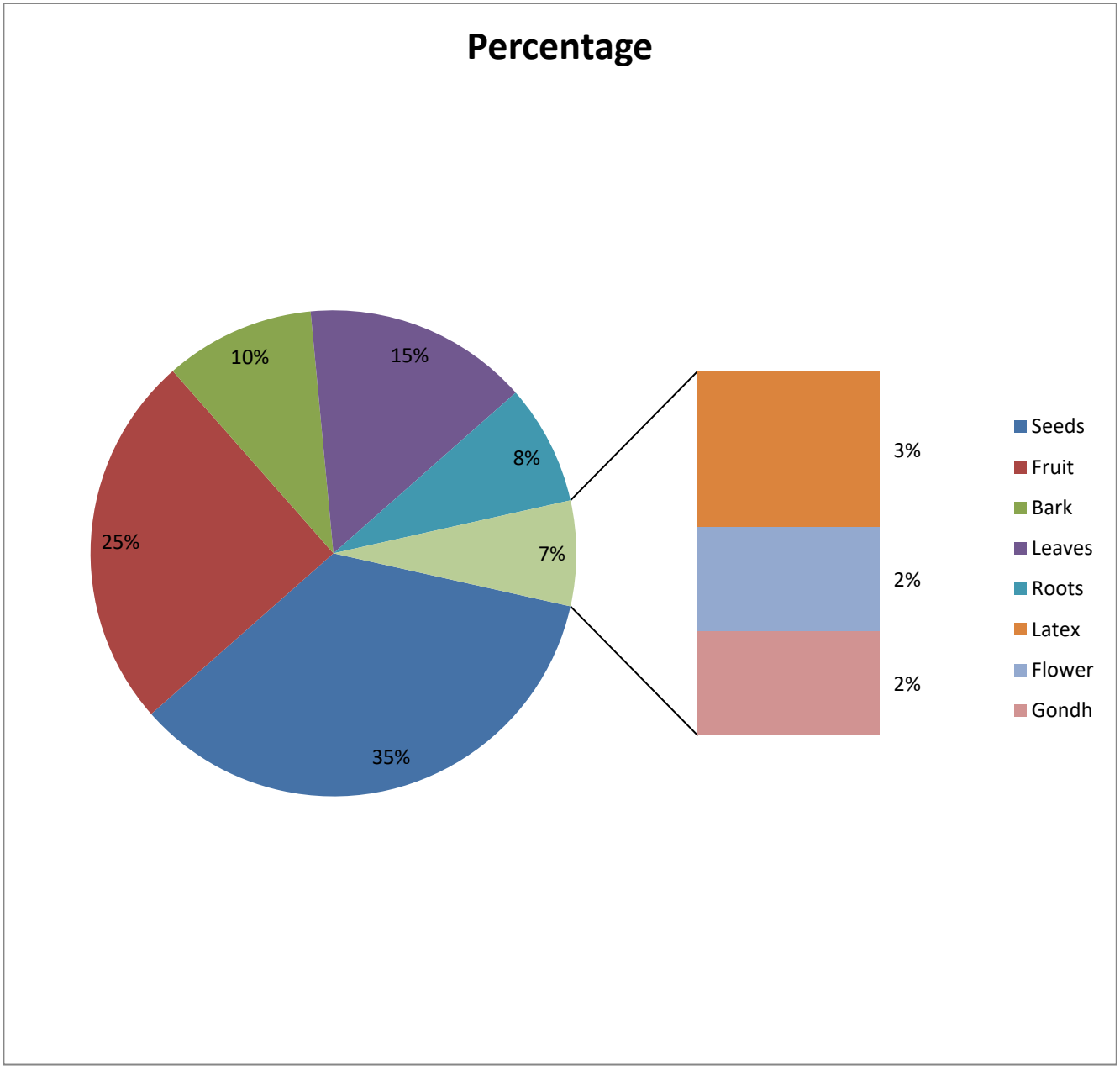
8. Latex is sometimes used for toothache relief.

9. Plant parts are believed to have anti-microbial properties.

10. Used in traditional medicine to promote quick recovery from injuries.

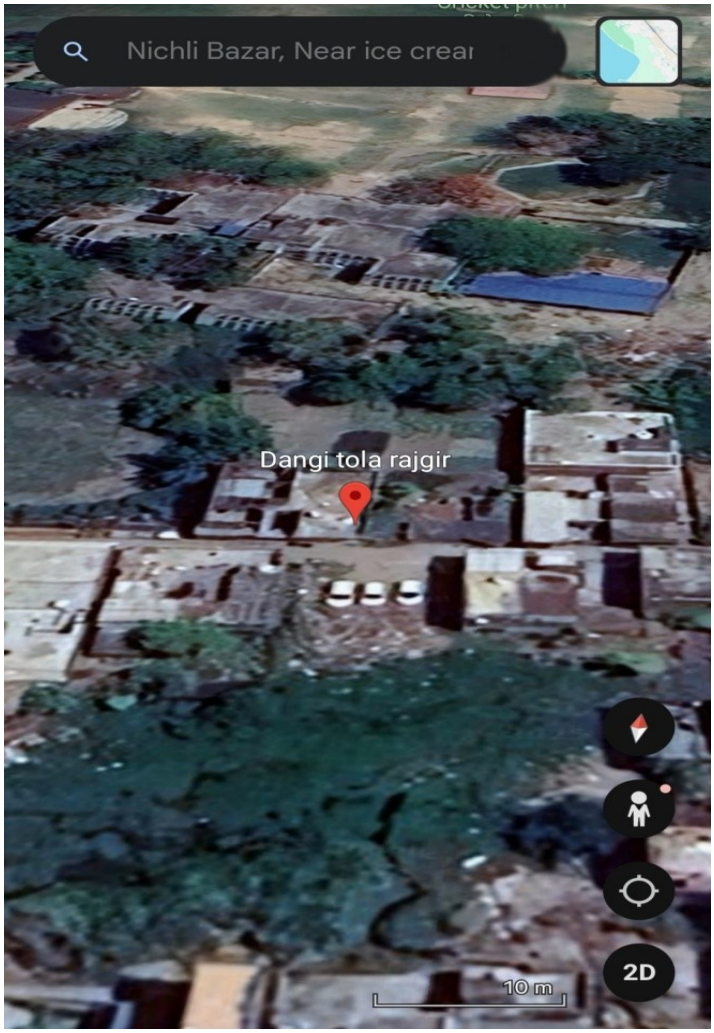
ETHNOBOTANICAL CHART – PARTS USED

S.No.	Local Name	Parts Used
1.	Arjun Chaal	Bark
2.	Peepal ka Pokha	Bark, leaves, Fruits, Roots
3.	Jamun Beej	Seeds
4.	Neem Beej	Seeds
5.	Gondh Katila	Gum
6.	Bhaang	Leaves, seeds, flower
7.	Gurmar	Leaves
8.	Chirayta	Whole Plant (mainly stems & leaves)
9.	Balam Kheera	Fruits, seeds, root
10.	Babul Ka Fal	Pods, seeds, fruit pulp
11.	Bel Guda	Fruit pulp, Seeds
12.	Redi	Leaves, seeds, latex roots



The analysis highlights that plant parts with multiple uses across different species contribute more significantly to overall utilization. This clearly shows that seeds are the most utilized part, as they appear in multiple plants, while fruits or fruit pulp are the second major contributors. Overall, the use of different plant parts varies according to their importance and multiple uses.

MAPPING OF HERBAL TRADE POINTS IN THE ADJOINING AREA



Address – Nichali Bazar, Near Ice Cream Factory, Dangi Tola, Rajgir, Bihar
Pincode -803116
Latitude -25.02904° N
Longitude -85.423834°E
No. of Shopes - 3

Nichli Bazar, near the ice cream factory in Dangi Tola, Rajgir, is located in easily accessible part of the town. Visitors can reach the area by taking the main road that connects Rajgir Railway Station to the Rajgir Bus Stand — the market lies roughly midway between these two points. Auto-rickshaws are the most common local transport options. For those arriving by train, the market is around 2–3 km from Rajgir Railway Station, while from the bus stand it is barely 1 km away. The ice cream factory acts as a well-known landmark, making it easy to locate. The narrow lanes leading into Nichli Bazar are lined with small shops, and the medicinal plant stores are grouped together, making them convenient for both buyers and suppliers. Road connectivity is good, and the location is within walking distance from several other local markets in Rajgir.

SHOPES SELLING MEDICINAL PLANT PRODUCTS IN RAJGIR







WHOLESALE MARKET OF BIHARSHARIF



Address- Marufganj
District – Patna
Pin Code – 800008
Longitude - 25.5871716°N
Latitude - 85.2337869°E

Bihar Sharif is an important retail market for medicinal plants in central Bihar, serving the daily needs of local residents, nearby towns, and rural communities. The main retail clusters are concentrated in Pulpar, Saluganj Mohalla, Nawab Road, Alamganj Road, and extending towards Bharaopar and Sohsarai. Here, around 9 specialized shops deal in dried herbs, roots, bark, seeds, and other herbal products used in Ayurveda, Unani, and folk medicine. These shops primarily cater to individual customers, small-scale practitioners, and itinerant vendors who buy in limited quantities. The products are sourced both locally—from rural collectors and nearby agricultural fields—and from larger supply points in other cities.

In contrast, Marufganj Market in Patna functions as a wholesale-cum-retail hub, handling bulk consignments not only for Patna city but also for other districts in Bihar. Large traders and commission agents in Marufganj stock massive quantities of medicinal plants and spices, acting as a central redistribution point for the state. Many of Bihar Sharif's retail shopkeepers source part of their stock from Marufganj, given its scale, variety, and competitive pricing.

This trade relationship positions Bihar Sharif as a downstream retail node in the herbal product supply chain, dependent on wholesale inflows from Patna and other big markets like Varanasi and Delhi. While Marufganj benefits from established infrastructure and wider reach, Bihar Sharif's strength lies in its accessibility to rural customers, personalised service, and its role as the last-mile point in the herbal distribution network. With proper training,

improved storage facilities, and better linkages to wholesale suppliers, Bihar Sharif's retail market could grow further, complementing the larger wholesale system anchored in Patna.

WHY MARUFGANJ SERVES AS THE WHOLESALE MARKET FOR BIHARSHARIF

1. Need –Based Ordering

- Retailers and traders from Biharsharif purchase goods in quantities matching current demand.
- Reduces storage costs and minimizes risk of product spoilage.

2. Frequent Supply Cycles

- Regular consignments from Marufganj keep stocks fresh and readily available.
- Short intervals between deliveries ensure market stability in Biharsharif.

3. Direct Communication with Wholesalers

- Traders maintain personal contact with Wholesalers in Marufganj.
- Enables better price negotiations, timely order adjustments, and quick resolution of supply issues.

4. Wide Variety of Products

- Marufganj acts as a comprehensive wholesale hub, supplying everything from staple food grains, pulses, and spices to edible oils, dry fruits, and packaged goods.
- One stop source for multiple business requirements.

5. Transportation Connectivity

- Road Transport – Trucks deliver goods directly from Marufganj to Biharsharif on a daily basis.
- Rail Transport – Patna's rail network facilitates bulk shipments and long-distance consignments. Reliable transport ensures timely arrival and reduces stockouts in Biharsharif's retail markets

CHALLENGES IN THE MEDICINAL PLANT TRADE

In the medicinal plant trade, farmers As well as collectors play a crucial role as the primary producers. However, despite their hard work in cultivation and harvesting, they often face a series of challenges that significantly reduce their profit margins and limit their long- term benefits.

They are as follows –

- **Lack of Storage Infrastructure –** Farmers often have no warehouse, cold storage, or drying facilities to preserve medicinal plants after harvest, leading to fear of quick spoilage, damage or loss in quality, they sell produce immediately after harvest, often at low market prices.
- **Limited Market Knowledge –**Unawareness of price trends, demand, and grading standards leads to missed profit opportunities. The absence of updated market rates makes fair negotiation difficult.
- **Dependence on Intermediaries –**The cultivators remain completely reliant on intermediaries, refraining from sending their produce to outside markets and placing full trust in these agents. This dependency significantly limits their earnings.
- **Dependence on Traditional Practices –** Reliance on old farming methods sometimes reduces productivity and quality compared to modern techniques.
- **Lack of Structured Market System –**Medicinal plant trade, operates within a fragmented and largely informal market system. There are no standardized procedures for pricing, grading, or quality control. This lack of structure makes it difficult for cultivators to secure fair prices, ensures that market trends remain unpredictable, and allows intermediaries to dominate the trade.
- **Unawareness of Government Schemes –** Most of farmers are unaware of subsidies, grants, or schemes available for medicinal plant cultivation and storage infrastructure. Due to a lack of information and outreach, a large section of the farming community is unable to apply for benefit from these programs. This gap in awareness prevents them from improving production quality, reducing post-harvest losses, and increasing profitability.

MAJOR FINDINGS

1. List of medicinal plants products, that is being sold in Biharsharif Markets, and their Price Comparison with Rajgir & Marufganj .

S.No.	Local Name	Scientific Name	Marufganj Price (Sampada Stores)	Biharsharif Price (Baba Jari Buti)	Rajgir Price (Narayan Jari Buti)
1.	Aamla	Phyllanthus emblica	140/kg	200/kg	200/kg
2.	Gurmar	*Gymnemasylvestre*	200/kg	250/kg	300/kg
3.	Chirayita	*Swertia Chirayita*	160/kg	220/kg	180/kg
4.	Sotth	*Zingiber Officinalis Roscoe*	260/kg	500/kg	520/kg
5.	NagoriAswgandha	*Withaniasomnifera*	450/kg	700/kg	740/kg
6.	Reetha	*Sapindusmukorossi*	90/kg	200/kg	200/kg
7.	Badi Harre	*Terminalia chebula*	50/kg	100/kg	100/kg
8.	Choti Harre	*Terminalia chebula*	150/kg	300/kg	300/kg
9.	Shikakai	*Acacia concinna*	120/kg	200/kg	250/kg
10.	Giloy	*Tinospora cordifolia*	50/kg	180/kg	160/kg
11.	Anantmul	*Hemidesmusindicu*	600/kg	700/kg	700/kg
12.	Tikhur	*Curcuma angustifolia*	200/kg	250/kg	200/kg
13.	Mitha bach	*Acorus calamus*	680/kg	800/kg	850/kg
14.	Safed musli	*Chlorophytum borivilianum*	1600/kg	3000/kg	2000/kg

15.	Paan ka jari	*Piper betle*	1300/kg	1600/kg	2000/kg
16.	B-dhara	*Argyreia nervosa*	580/kg	700/kg	750/kg
17.	Babul Gondh	*Acacia Nilotica*	340/kg	450/kg	400/kg
18.	Taal Makhana	*Euryale Ferox*	320/kg	400/kg	600/kg
19.	Kubarkoni	*Justicia Adhatoda*	580/kg	700/kg	700/kg
20.	Chatila	*Cassia Tora*	560/kg	700/kg	750/kg
21.	Dhatura Bia	*Datura Metel*	330/kg	400/kg	300/kg
22.	Gaav	*Semecarpus Anacardium*	170/kg	200/kg	150/kg
23.	Laal Jari	*Celosia Argentea*	1250/kg	1500/kg	2000/kg
24.	Nagar Motha	*Cyperus Rotundus*	330/kg	400/kg	450/kg
25.	Kochla	*Mucuna Pruriens*	380/kg	600/kg	400/kg
26.	Galeha	*BuchananiaLanzan*	280/kg	350/kg	300/kg
27.	Daaru Haldi	*Curcuma Aromatica*	580/kg	700/kg	750/kg
28.	Sankusti	*Costus Speciosus*	250/kg	300/kg	200/kg
29.	Brahmii	*Bacopa Monnieri*	210/kg	250/kg	200/kg
30.	Tejbal	*Zanthoxylum*	85/kg	100/kg	100/kg
31.	Palas Peepal	*Thespesia populnea*	150/kg	250/kg	200/kg
32.	Manjith	*Rubia cordifolia*	370/kg	450/kg	400/kg
33.	Jatamansi	*Nardostachys*	680/kg	800/kg	1000/kg
34.	Tulsi Beej	*Ocimum Tenuiflorum*	610/kg	700/kg	700/kg

2. Reasons for Price Differences of Medicinal Plants in The above areas.

The variation in prices can be attributed to several interconnected factors –

Transportation Costs

The cost of moving medicinal products from collection sites to the market affects prices. Remote areas with poor transport infrastructure tend to have higher transportation costs, which are reflected in the final price.

Bulk Vs Retail Sales Buying in bulk usually lowers the per-unit cost, while retail sales are priced higher. Markets that deal primarily in smaller retail quantities often have higher prices compared to wholesale markets.

Supply Chain Length

A longer supply chain with multiple intermediaries adds extra costs at each stage, leading to higher market Prices.

Storage and Shelf Life

Medicinal plants with short lives or those requiring special storage conditions, like controlled humidity, refrigeration, include additional storage costs. Market with limited storage facilities may charge more to compensate for spoilage risk.

Processing Requirements

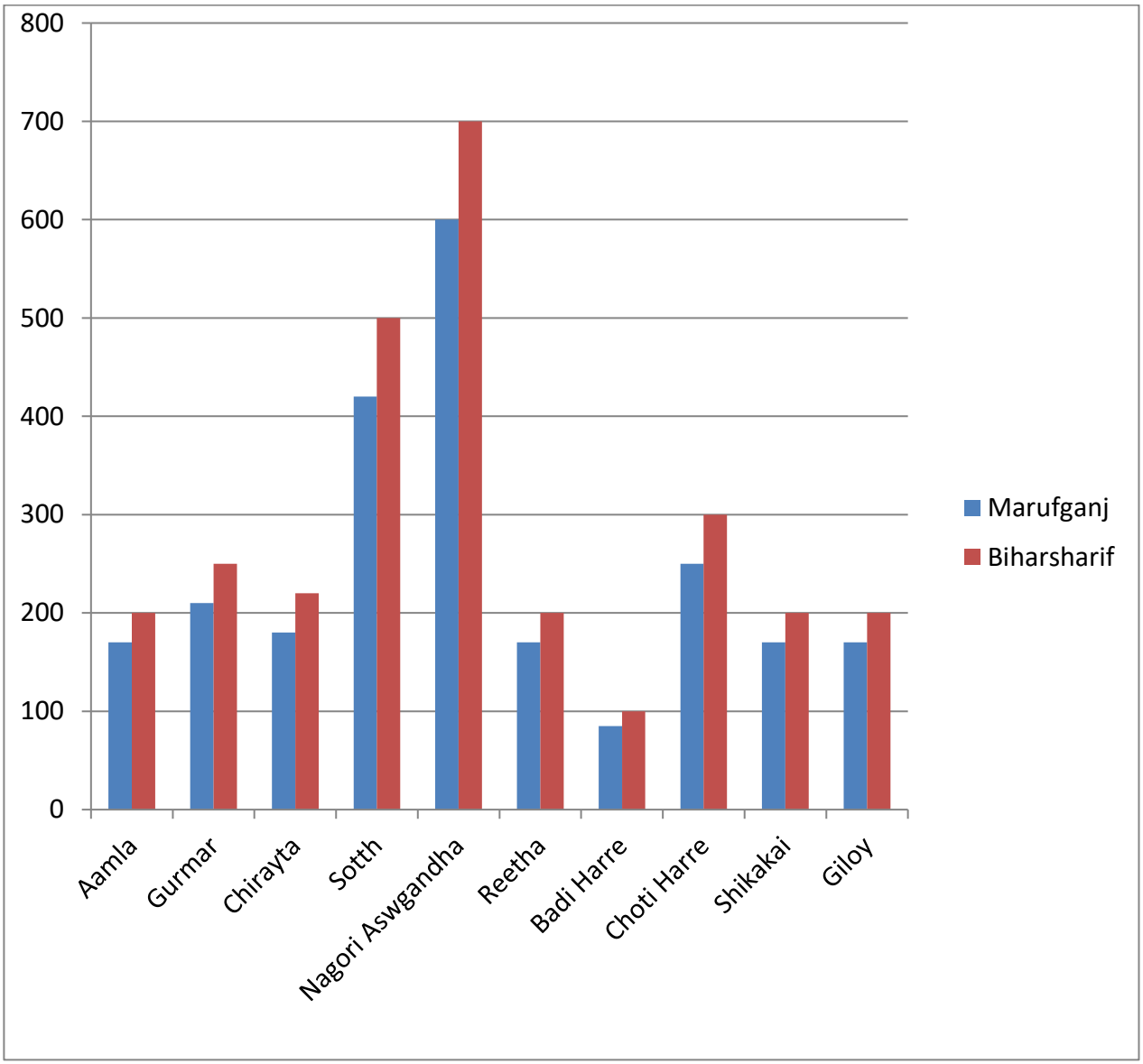
Some medicinal plants require processing, that is cleaning, drying, grinding, or extraction, before sale. The labor, equipment, and time involved in processing increase the product's cost. For example, in the trade of Aamla, one full sack usually weights around 30 kilograms. From this amount, around 2-3 kilograms of fine powder is separated out during processing. The leftover waste material, including seeds and spoiled pieces, is generally discarded.

Local Demand and Availability

Areas with higher demand but limited local supply may have inflated prices, whereas regions with abundant supply may see lower prices

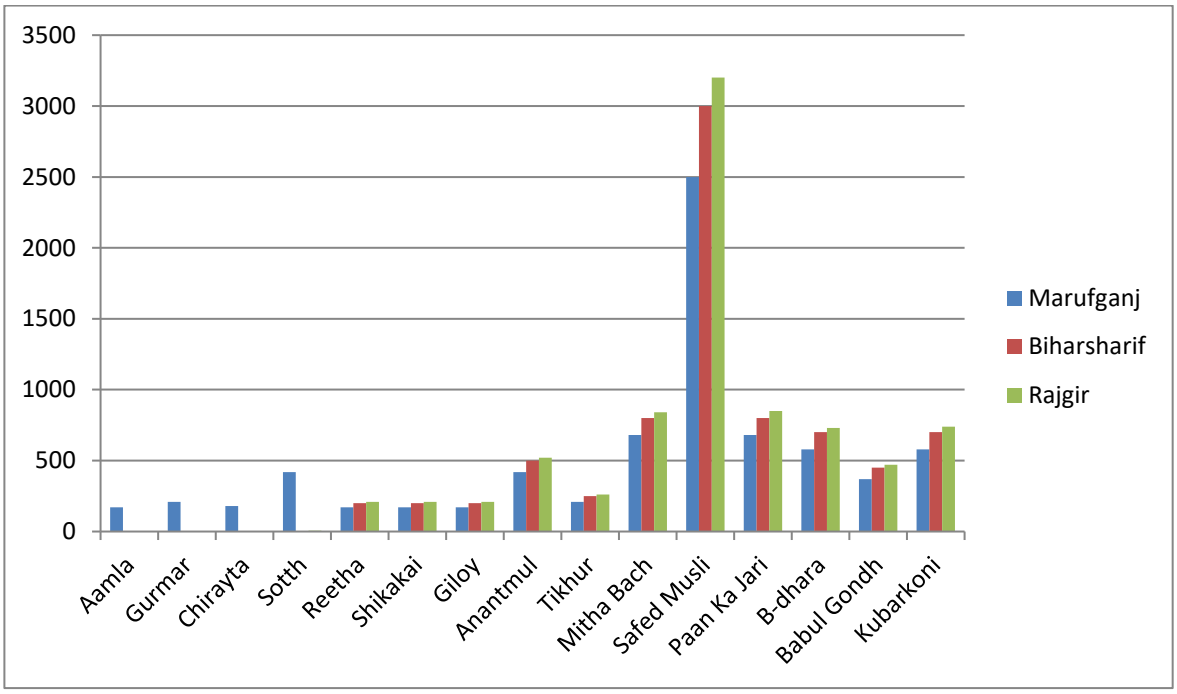
In Biharsharif, retailers procure medicinal plants according to the specific demand of their customers, ordering quantities that much local consumption patterns. In contrast, Marufganj primarily receives large bulk shipments, catering more to wholesale or large-scale distribution. Rajgir falls in between, with a mix of semi-wholesale and retail transactions. These differences in ordering patterns, supply chain focus, and local consumption directly contribute to the variations in prices across the three markets.

GRAPH SHOWING THE PRICE COMPARISON OF MEDICINAL PLANTS IN MARUFGANJ AND BIHARSHARIF.



From the graph, it is clear that the overall prices of most medicinal plants are slightly higher in Bihasharif compared to Marufganj. In Biharsharif, plants such as Nagori Aswagandha, Badi Harre, Choti Harre, and Sotth show noticeably higher rates. This indicates that Biharsharif's market generally maintains a higher price range, possibly due to factors like differences in transportation, and supply chain costs. This price difference highlights how market type, retail or wholesale significantly influences the cost of medicinal plants.

GRAPH SHOWING THE PRICE COMPARISON OF MEDICINAL PLANTS IN MARUFGANJ,BIHARSHARIF, AND RAJGIR



The Graph illustrates the price comparison of various medicinal plants across Marufganj, Biharsharif, and Rajgir. Overall, most plant prices in Marufganj are slightly lower. Prices in Biharsharif and Rajgir are generally comparable, though Rajgir shows slightly higher rates for certain plants, while some plants that are found in the forests of Rajgir are priced the lowest there.

Safed Musli, emerges as the most expensive plant, ranging between Rupees 3000- 3200 across all the three places, while Paan ka jari also ranks among the costlier plants. On the other hand, plants like Aamla, Gurmar, Chirayta, Sotth, and Shikakai are relatively inexpensive, with prices ranging from Rupees 0- 500, consistent across all locations. Certain plants, such as Reetha, Anantmul, B-dhara, and Babul Gondh, are priced slightly higher in Rajgir and Biharsharif, whereas Marufganj generally offers slightly lower prices.

Overall, the data suggests that while price variations exist, Marufganj tends to have the lowest prices, and Safed Musli consistently commands the highest price

Trade Flow In Biharsharif



Step 1 – Plantation

Some plants grow naturally in forests, hills, and wastelands, while mainly medicinal plants are grown by farmers and herbal cultivators in farmlands, home gardens, or small herbal farms. This ensures year-round availability and reduces dependence on wild collection, which helps in conservation of Biodiversity.

Step 2-Plant Growth and Care

During Cultivation, plants are carefully tended, including watering, soil management, and protection from pests. Farmers often use organic manure and herbal pest control to maintain the medicinal quality of the plants. Wild plants, on the other hand, grow naturally and are dependent on seasonal rainfall and natural soil fertility. Observing the right growth conditions ensures the potency and effectiveness of the medicinal herbs.

Step 3 – Harvesting

Harvesting is done with utmost care to preserve the therapeutic properties of each plant. Depending on the species, roots, leaves, stems, flower, or seeds are collected. For example, roots of Ashwagandha, Leaves of Tulsi, or bark of Giloy are selectively harvested. In Rajgir, wild plants are collected seasonally, often by local gatherers who know the best time and method for harvesting to maximize medicinal value.

Step 4 – Drying

After harvesting, plants are sun-dried or shade-dried, depending on their sensitivity to sunlight. Proper drying is critical to reduce moisture content, which prevents fungal growth, spoilage, and loss of medicinal quality. Farmers and collectors usually spread plants on clean mats, rooftops, or special drying racks. Some high-value herbs may be partially shade-dried to retain essential oils and bioactive compounds.

Step 5 –Cleaning and Sorting

Once dried, plants are cleaned to remove dust, soil, and damaged parts. They are also sorted and graded by size, color, and quality. This step is crucial because market prices depend heavily on quality and appearance. In local Biharsharif shops, plants are often sold in pre-weighed packets, while for wholesale trade, they are bundled or packed in bulk for easy transportation.

Step 6 – Local Market Distribution

A portion of the medicinal plants is sold in local markets and small shops in Biharsharif and surrounding villages. Price fluctuates according to season, demand, and rarity. Local retailers provide herbs for household use, small Ayurvedic preparations, and traditional remedies.

Step 7 – Wholesale Market and Further Distribution

The remaining plants, especially high-volume species, are transported to wholesale hubs, mostly wholesalers reach out by themselves. Wholesalers distribute these herbs to larger retailers, Ayurvedic medicine manufacturers, and herbal product companies across Bihar and even other states.

1. Consumer Group of Medicinal Plants in Biharsharif

- **Urban Consumers** - Urban households in Biharsharif are increasingly adopting herbal remedies for health and wellness. These consumers prefer medicinal plants for preventive care, home remedies, and natural treatments. Their demand has been steadily growing due to increased awareness of herbal medicine benefits and a shift toward natural health solutions.

- **Traditional Healers –** Traditional healers, including Vaidyas and Hakims, form a crucial consumer group in Biharsharif. These practitioners have extensive knowledge of Ayurveda, Unani, and other traditional medical systems. They serve both urban and rural populations.

- **Pharmaceutical –** Pharmaceutical Companies, small-scale hetrbal product manufacturers constitute another important consumer segment. These businesses procure raw medicinal plants in bulk from local farmers, wholesalers, and markets. The plants are processed into herbal formulations, health supplements, wellness products, and cosmetic items. Increasing demand for Ayurvedic and herbal products, both locally and nationally, has encouraged commercial cultivation of high-value medicinal plants in and around Biharsharif.

- **Educational and Reasearch Institutions –** Educational institutions, agricultural colleges, and researchers like me, also consume medicinal plants for study, experimentation, and demonstration purposes. They play a key role in preserving traditional knowledge and introducing modern scientific approaches to herbal medicine.

- **Rural Consumers from Surroundings Area –** People from nearby areas also come to buy medicinal plants here. They purchase for household use, traditional remedies, and small-scale herbal businesses, contributing to the overall demand in the market.

2. List of Medicinal Plants Found in Rajgir

S.No.	Local Name	Scientific Name	Price
1.	Arjun Chaal	*Terminalia Arjuna*	200/kg
2.	Peepal ka Pokha	*Ficus religiosa*	200/kg
3.	Jamun Beej	*SyzygiumCumini*	200/kg
4.	Neem Beej	*Azadirachta indica*	200/kg
5.	Gondh Katila	*Astragalus Gummifer*	600/kg
6.	Bhaang	*Cannabis Sativa*	200/kg
7.	Gurmar	*Gymnema Sylvestre*	300/kg
8.	Chirayta	*Swertia Chirayita*	200/kg
9.	Balam Kheera	*Cucumis melo var. agrestis*	1000/kg
10.	Babul Ka Fal	*Vachellia nilotica*	200/kg
11.	Bel Guda	*Aegle marmelos*	200/kg
12.	Redi	*Jatropha Gossypiifolia*	800/kg

Medicinal plants are found throughout the hilly regions of Rajgir, particularly along areas with dense wild vegetation or forested zones. According to the discussion with the shopkeeper and the information I gathered from them, they are Particularly found in Hill Number 2, Hill Number 3 and Hill Number 4, and these hills are renowned for their rich biodiversity as compared to other hills and historical significance. These hills are part of the Panch-Pahari range, host a variety of medicinal plants have been used in traditional healing practices for centuries. These plants are crucial not only for their medicinal applications but also for maintaining the ecological balance and supporting local cultural practices.

3. Contact Details of Retailers and Suppliers for Reference

S. No.	Shop Name	Location	Contact Number
1.	Baba Jari Buti & Puja Bhandar	Pulpar, Biharsharif	9771566473
2.	Khandani Jari Buti	Pulpar, Biharsharif	8405874428 9334705754
3.	Jay Sant Baba Exports	Saluganj Mohalla, Biharsharif	7870943008
4.	Deep Laal Ji Ki Dukan	Dhoni Tola,, Rajgir	9334980397
5.	Narayan General Store & Jari Buti Bikreta	Dhoni Tola,, Rajgir	8210213818
6.	Sukhari Ji Shambhulal Jari Buti Kei Dukan	Dhoni Tola,, ,Rajgir	9546246716
7.	Sampada Stores Merchgants& Commission Agent of Kirana, Ayurvedic & Unani Herbs	Marufganj, Patna City	9430830365 9431009797
8.	Patanjali Arogya Kendra	Aashok Raj Path, Marufganj	9472292841
8.	Muskan Traders & Jari Buti Stores	Marufganj, Patna City	9122660521
9.	Savora Foods	Pune	7943438331
10.	The Herbs N Spices	Neemuch, Madhya Pradesh	8046063649
11.	Pooja Traders	Ahmedabad	7600306641
12.	Shreena Enterprise	Ahmedabad	9265610797
13.	Ambe NS Agro Product Pvt	Ghaziabad	9650818888
14.	Uniq Expo	Ahmedabad	7942789108
15.	Herboplanet	Jaipur	8044919883

FIELD SURVEY CHALLENGES

Conducting a field survey for Medicinal plant trade involves several practical and ethical challenges. These difficulties arise from interacting with Shopkeepers, navigation busy markets, ensuring accurate data collection, and maintaining the safety and comfort of the researcher, especially as a female field investigator.

S. No.	Difficulty	Reason
1.	During the survey, some shopkeepers did not allow photographs of their shops to be taken.	They were concerned about privacy and did not want their business details exposed, fearing it might lead to unauthorized use of their trade information.
2.	Several shopkeepers refused to disclose their sources for medicinal plants.	Revealing sources could compromise supply chains, create competition, or effect trust with suppliers.
3.	Collecting information required spending hours at shops, as shopkeepers were busy attending customers.	Only after seeing shopkeepers, handle their daily activities did they respond to survey questions, making patience essential.
4.	Some Shopkeepers did not respond directly to phone, messages or requests for prices.	They preferred in-person interactions to verify the purpose, maintain control over the information, and ensure privacy.
5.	It was sometimes difficult to move around crowded markets and talk freely with shopkeepers.	Cultural norms and busy market conditions made some interactions slower or limited.
6.	Prices and availability of products varied from shop to shop.	Needed repeated verification and careful comparison for accurate reporting.

GOVERNMENT SCHEMES & POLICIES

National AYUSH Mission

- Focus on cultivation, conservation, and processing of medicinal plants.
- Provides subsidies, 30% to 75% on cultivation of identified species.
- Funds for nursery development, quality planting material, and post-harvest infrastructure.

Central Sector Scheme on Conservation, Development, and Sustainable Management of Medicinal Plants.

- Establish medicinal plants conservation Areas in forests and Biodiversity rich zones.
- Develop herbal gardens, nurseries, and gene banks.
- Drying, storage, and processing infrastructure support.

Scheme for Strengthening of Pharmaceuticals Industry.

- Provides financial assistance for upgrading technology and infrastructure in pharmaceutical and herbal product manufacturing units.
- Supports Quality Certification for herbal and Ayurvedicproduct industries.
- Funds for testing laboratories, R&D facilities, and skill development in pharmaceutical manufacturing.

Bihar Agriculture Investment Promotion Policy.

- Provides capital subsidies, tax benefits, and single-window clearances for agri-enterprises, including herbal and medicinal plant units.
- Encourages value addition, herbal product manufacturing, and exports.

MukhyamantriBagwani Mission.

- State level initiative promoting horticulture crops, including medicinal and aromatic plants.
- Offers subsidies on planting material, irrigation systems, shade nets, and drip irrigation.
- Encourages diversification from traditional crops to high-value medicinal species.
- Focuses on cluster-based cultivation and linking farmers with markets.

OPPORTUNITIES

- Integrate NHPM plantations with AYUSH, BAIPP, and SPI incentives to create herbal green corridors and manufacturing hubs.
- Develop community nurseries, FPOs, and contract farming for medicinal plants.
- Establish herbal extraction, processing, and packaging units in Bihar under SPI support.
- Use Central Railway freight subsidies for cost-effective transportation of bulk medicinal products.
- Strengthen supply linkages between Biharsharif, Rajgir, and National herbal industries.

S. No.	Expected Outcomes
1.	Creation of new markets and job opportunities in medicinal plant trade.
2.	Improved income for farmers and small entrepreneurs.
3.	Adoption of eco-friendly cultivation practices.
4.	Better quality raw materials for pharmaceuticals and herbal industries.
5.	Conservation of threatened medicinal plant species.
6.	Increased area and production of high-demand herbal crops.
7.	Greater public trust due to transparent operations.

IMPORTANCE IN BIODIVERSITY

Medicinal plants are not only crucial for human health but also play a vital role in maintaining ecological balance and Biodiversity. Their presence supports complex ecological interactions and contributes to sustainable agricultural and natural ecosystems.

Ecological Associations between Medicinal Plants & Insects.

- Many medicinal plants form mutualistic relationships with insects such as bees, butterflies and other pollinators.
- Flowers of plants like Tulsi, Neem and Amla provide nectar and pollen, supporting pollinator diversity, which in turn ensures seed set and propagation of plant species.
- Certain medicinal plants act as host plants for beneficial insects, helping maintain a balanced ecosystem.
- Some insect species that are host-specific to medicinal plants and generally not found on non-medicinal plants, for example- Ashwagandha Leaf Webber, Holy Basil Leaf Beetle, Turmeric Shoot Borer, etc.

Animals use medicinal plants for self-mediation.

- Animals utilize medicinal plants for self-medication, For example, goats, cattle, and wild herbivores consume plants like, Neem, Amla, and Giloy to treat internal parasites, infections, or digestive issues.
- This interaction highlights the functional role of medicinal plants in wildlife health and survival.

As Herbal Biopesticides, reducing chemical pesticide dependency.

- Medicinal plants such as Neem, Tulsi, produce bioactive compounds effective against pests and pathogens.
- Farmers use extracts as herbal biopesticides, reducing dependence on chemical pesticides.
- This promotes eco-friendly pest management, safeguarding soil, water, and non-target species.

Improves Soil health & support Nutrient Cycling.

- Medicinal plants improve soil fertility through leaf litter decomposition, which adds organic matter and nutrients back to the soil.
- Their root systems enhance soil structure, prevent erosion, and support microbial diversity critical for nutrient cycling.
- Some species fix nitrogen or support beneficial microbes, indirectly promoting growth of surrounding plants.

Reservoirs of Genetic Diversity.

- Medicinal plants acts as living repositories for rare, threatened, and endemic species, preventing loss of unique genetic traits.
- Genetic diversity in medicinal plants can be used in research by develop disease-resistant or high-yielding crops.
- Diverse medicinal plant genotypes support multiple traditional uses, remedies, and rituals, preserving local knowledge systems.

Indicator Species for Environmental Health.

- Certain medicinal plants thrive only in nutrient-rich or specific soil conditions. Their presence or absence indicates soil fertility and contamination levels.
- By observing indicator species, researchers can identify vulnerable areas needing restoration, protection, or sustainable management.

Cultivation and conservation of medicinal plants create habitats for insects, birds, and small mammals, enhancing species richness. Medicinal plant diversity acts as a buffer against environmental stresses, ensuring ecosystem resilience. Integration into farming systems supports agro-biodiversity while providing economic and ecological benefits.

SUGGESTIONS AND WAY FORWARD FOR MEDICINAL PLANTS DEVELOPMENT

The medicinal plants sector in Biharsharif has immense potential, but its growth is constrained by fragmented supply chains, lack of standardization, and limited awareness among farmers and traders. The following suggestions aim to promote sustainable cultivation, conservation, and value addition.

Strengthen Cultivation Practices

- Promote cluster-based cultivation of high-demand species like Tulsi, Ashwagandha, Giloy, and Satavari.
- Encourage adoption of organic farming, drip irrigation, and integrated pest management to improve yield and quality.
- Provide training programs under Mukhya Mantra Bagwani Mission and National AYUSH Mission for farmers on best cultivation practices.

Develop Infrastructure and Market Linkages

- Establish collection centers, processing units, cold storage, and quality testing labs in major hubs like Bihar Sharif and Rajgir.
- Facilitate direct communication between farmers, wholesalers, and pharmaceutical industries to reduce exploitation by intermediaries.
- Introduce digital marketplaces and standard pricing systems for medicinal plants.

3. Promote Research, Conservation, and Sustainable Harvesting

- Conduct resource surveys and ecological studies to identify threatened species and promote in-situ and ex-situ conservation.
- Encourage scientific harvesting and cultivation to prevent over-exploitation of wild medicinal plants.
- Strengthen partnerships with research institutions, universities, and herbal product manufacturers for R&D.

Policy Support and Financial Incentives

- Leverage Central and State schemes: National AYUSH Mission, NHPM, BAIPP, Central Sector Scheme for Medicinal Plants, SPI, and Mukhya Mantri Bagwani Mission.
- Provide subsidies, low-interest loans, and insurance schemes for farmers and herbal entrepreneurs.
- Promote public-private partnerships to scale up production and processing.

Awareness, Training, and Capacity Building

- Conduct awareness campaigns on the importance of medicinal plants in biodiversity, health, and sustainable agriculture.
- Organize skill development workshops on value addition, herbal product manufacturing, and quality certification.
- Encourage youth and women's participation in medicinal plant-based enterprises.

Environmental and Biodiversity Benefits

- Integrate medicinal plants into agro-forestry, road-side plantations, and community forests.
- Promote the use of medicinal plants as herbal bio-pesticides to reduce chemical pesticide dependency.
- Support ecosystem services such as pollinator conservation, soil health improvement, and nutrient cycling.

SCOPE FOR FUTURE RESEARCH AND ACTIONS IN MEDICINAL PLANTS SECTOR

Bihar, particularly the regions around Biharsharif and Rajgir, holds tremendous potential for the cultivation, trade, and scientific study of medicinal plants. Strategic research and targeted interventions can enhance economic, ecological, and social outcomes in the sector.

Comparative Market Analysis

- Conduct in-depth studies comparing Bihar Sharif's medicinal plant markets with leading herbal trade centers in India such as Jaipur, Lucknow, and Trivandrum.
- Examine pricing trends, demand-supply patterns, value addition processes, and wholesale-retail linkages.
- Identify opportunities to improve market competitiveness, streamline supply chains, and expand both domestic and export reach.

Medicinal Plant Mapping Using GIS

- Employ Geographical Information Systems (GIS) to map distribution, density, and diversity of wild and cultivated medicinal plants.
- Identify high-value species clusters, potential cultivation zones, and biodiversity hotspots.
- GIS-based mapping will support resource planning, sustainable harvesting, and ecological monitoring, ensuring long-term conservation.

Nutritional and Phytochemical Profiling

- Conduct scientific analyses of nutritional content and bioactive compounds in local medicinal plants.
- Establish quality standards, efficacy data, and pharmacological validation for both local use and commercial products.
- Facilitate the development of value-added herbal products, enhancing income potential and market credibility.

Documentation of Traditional Knowledge

- Study indigenous knowledge and practices of traditional healers, tribal communities, and local herbal practitioners.
- Record methods of preparation, therapeutic uses, and dosage information for medicinal plants.
- Integrate traditional wisdom with modern research to promote culturally sensitive and scientifically backed herbal solutions.

5. Policy and Program Impact Assessment

- Evaluate the effectiveness of Central and State initiatives, National AYUSH Mission, BAIPP, Mukhya Mantri Bagwani Mission, Central Sector Scheme for Medicinal Plants, NHPM, and SPI.
- Assess implementation efficiency, farmer awareness, subsidy reach, and market facilitation measures.
- Recommend improvements to ensure policy interventions translate into tangible benefits for farmers, traders, and local communities.

Way Forward

- Future research should adopt a multidisciplinary approach, combining ecology, agronomy, pharmacology, socio-economics, and GIS technology.
- Foster collaborations between universities, government agencies, NGOs, and herbal industries for knowledge sharing and innovation.
- Strengthen the medicinal plants sector to enhance livelihoods, conserve biodiversity, and position Bihar as a key player in India’s herbal economy.

SITE VISIT PHOTOGRAPHS










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GPS Map Camera
Bihar Sharif, Bihar, India
5gwf+89v, Mahal Par Rd, Pulpar, Saluganj Mohalla, Bihar Sharif, Bihar 803101, India
Lat 25.195748° Long 85.523546°
28/04/2025 04:35 PM GMT +05:30
Google


Surya Suraksha
GPS Map Camera
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GPS Map Camera
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खानदानी जड़ी बुटी
पुलपर, बिहार शरीफ
GPS Map Camera
Bihar Sharif, Bihar, India
5gwf+c84, 9, Alamganj Rd, Near Jama Masjid Road, Pulpar, Pul Par, Bihar Sharif, Bihar 803101, India
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28/04/2025 04:38 PM GMT +05:30
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CONCLUSION

This study on the, "Trade of Medicinal Plant Products in Biharsharif and Its Adjoining Area" provides a comprehensive understanding of the structure, diversity, sourcing patterns, and challenges of the regional herbal market. Over three months of field visits, it became clear that the trade network is vibrant yet highly fragmented, linking local collectors, small-scale retailers, and large wholesale centers.

A total of 28 key medicinal plants were documented in the Biharsharif retail market, with comprehensive ethnobotanical profiles, detailing their botanical identity, parts used, and therapeutic applications. The study found that while a portion of products is sourced from nearby forests such as those in Rajgir, a significant share comes from wholesale centers like Marufganj, often reflecting noticeable price differences. Market prices were found to be directly influenced by local demand, and the rarity of species.

However, the sector faces significant challenges, including the lack of modern storage facilities, secrecy regarding supply sources, inconsistencies in quality standards, and fluctuating prices across shops. In particular, the absence of proper storage infrastructure results in deterioration of product quality due to exposure to moisture, heat, and pests.

Despite these challenges, the medicinal plant trade in Biharsharif and Rajgir holds substantial potential for economic growth, livelihood generation, and biodiversity conservation. By strengthening cultivation practices, establishing processing and storage facilities, improving market linkages, and promoting sustainable harvesting, this sector can emerge as a model of both commercial success and ecological responsibility.

This study not only documents the current market scenario but also provides a valuable knowledge base for future interventions, policy formulation, and conservation strategies aimed at preserving Bihar's rich herbal heritage while enhancing its contribution to the state's economy.

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- European Journal of Biomedical and Pharmaceutical Sciences.
- https://www.scribd.com/doc/289407893/List-of-important-Medicinal-Plants-and-Their-Uses
- Field survey and market obersation conducted in Biharsharif, Rajgir, and Marufganj Between April-July 2025.
- Personal communication with herbal product retailers and wholesale traders in Biharsharif, Rajgir, and Marufganj.

• QUESTIONNAIRE

Topic – Trade of Medicinal Plants Products in Biharsharif And Its Adjoining Area.

Respondent Details

Name of Seller - _____

Shop Name -_____

Location - _____

Section 1 – Background Information

1. How long have you selling medicinal plants or herbal products?
   ☐ Less than 1 year ☐ -5 years ☐ More than 5 years
2. Did you start this shop/business yourself or inherit it from your family?
   ☐ Started myself ☐ Inherited from family
3. Does your family have a tradition of working with medicinal plants?
   ☐ Yes ☐ No

Section2 – Products and Sales

4. Which medicinal plants products do you sell the most?
   _____
5. From where do you usually source your medicinal plants?
   Local collectors ☐ Forest area nearby ☐ Wholesale market ☐ Others ☐
6. Who are your main customers?
   Local people for home remedies ☐ Ayurvedic doctors/Vaidyas ☐ Others ☐
7. What is the average monthly income from medicinal plant sales?
   Below Rupees 5000 ☐ Rupees 5000-10,000 ☐ Above 10,000 ☐
8. Which products give you the highest profit?
   _____

Section 3 – Market Conditions

9. How do you decide the price of your products?

   Based on wholesale price ☐ Market demand ☐ Own fixed rate ☐

10. Are medicinal plant products in high demand in your area?

    Yes ☐ No ☐ Seasonal only ☐

11. Do you face any difficulties in selling medicinal plants? (Tick all that apply)

    Low demand ☐ High competition ☐ Difficulty in sourcing ☐

    Lack of awareness among customers ☐ Other ☐

12. Have you received any government or NGO support for your business?

    Yes ☐ No ☐ Not aware ☐

Section 4 – Future and Support

13. Do you think selling medicinal plants can be a sustainable source of income?

    Yes ☐ No ☐ Maybe ☐

14. Are young people interested in joining this trade?

    Yes ☐ No ☐ Somewhat ☐

15. What kind of support do you need to improve your business?

    Better supply chain ☐ Price support ☐ Training ☐ Loan/Financial help ☐

    Marketing support ☐ Other ☐

    Additional Comments (if any)

    _____

    _____

    _____

    _____

    _____

    _____