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# Ethnobotanical studies of Nawegaon National Park, District - Gondia, Maharashtra, India.

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**Abstract**:
Indigenous knowledge of medicinal plants is scarcely recorded. Knowledgeable people have either died without divulging their knowledge on medicinal plants to others or refuse to part with Indigenous knowledge system for reason best known to them. Probably it was a sort of keeping secrecy. Ethnic people found in the areas are 'Gond' Protection of traditional medicinal knowledge is most important in the present scenario. Ayurveda, Unani and Homeopathic systems of medicines rely heavily on medicinal plants and therefore, scientific cultivation of medicinal plants and extensive phytochemical research is being carried out. Present work deals with about 239 medicinal plants in the study areas, details of 34 medicinal plants are given here.
KEY Words: Ethnobotany, wildlife, drug, phytochemical, cultivation

**Introduction**:
According to WHO, 3.5 billion people in developing countries used plant-based medicines for their primary healthcare, it is also experienced during pandemic crise of COVID-19, human respiratory tract infection of corona virus. WHO further indicates that over 30% of World's plants species have at one time or another been used for medicinal purpose. Over 35,000 plants are used in various human cultures around the world, while about 20,000 plants are marked for medicines and cosmetics. The cultivation of medicinal plants are for food, healthcare and cure dates back to the late Mesolithic to early Neolithic age, roughly about 10,000 B.C. Assyrians recorded 250 medicinal plants and Sumerians 1000 plants. Civilizations of ancient China, India, Egypt, Greece, Arabia, Europe, Africa, North America and Latin America, all recorded the use of medicinal plants in their traditional medicines. From time immemorial, the people of India have been using thousands of medicinal plants for curing various diseases. Ancient Indian medical heritage is based on 7000 plant species and about 8000 herbal remedies have been codified in the Ayurveda. The earliest mention of the medicinal use of plants is found in the Vedas (1500 BC); the most important of which was the Regveda (4500-1500 BC) which lists 67 plants of therapeutic values. likewise, the *Yajurveda* lists 81 medicinal plants followed by the Atharvaveda which mentions 290 medicinal plants. The Vedas were followed by the Charaka samhita (700 BC) which provides a list of 395 plant drugs and their products for use in health management. The three great works of Ayurveda viz. Charaka samhita, Sushruta samhita and Ashtanga hridaya mention 19,000 plant names. However according to Srivastav & Mudgal (1995), there are 2000 medicinal plants recorded in India. Present work deals with about 239 medicinal plants in the study areas.

**About the Study Area:** Nawegaon National Park ,Maharashtra ,India .
The National park (Biogeographical Province 06D) established on 22 November 1975 as per the Govt. Gazette Dec. 4,1975/ AP. Shake 1897, covering an area *133.884 sq. km* under Wildlife Protection Act 1972. The name Nawegaon National Park is based on the Nawegaon bandh lake. It has water spread over 11 sq.km., surrounded by seven peaks known as the "Sat Bahini"or seven sisters. The lake is a gift to bird watcher given by the Dongarwar family. Their descendants even today contribute a major efforts for Biodiversity conservation.Hence as a tribute the Kolasur island ("Maldonger") with the Samadhi of Shri.Kolu Patil Dongarwar,who was the instrumental in establishment of this tank in the 13$^{th}$ centuary and is still revered by the local.The area around the lake is known as 'Dr.Salim Ali Bird Sanctuary'in memory of the noted ornithologist.

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**Location:** The area is located towards South of Bhandara in Gondia district of Maharastra State (India) under the Gondia forest division. It includes a forest range viz. Pratapgarh and a few villages ( *Kawlewada, Zankargondi, Nishani, Tumdimendha and Malkazari*) and 4 Reserve forest compartments.
**Geology:** The geological formation of the National Park gives rise to numerous natural springs, streams, water holes which have maintained diverse living forms in the area. The National Park is popular forest Resort with picturesque low lying undulating hills fringing the lake of Nawegaon. *Geologically* the area has varied rocks ranging from Precambrian gneiss and granite to laterite and alluvium.
**Soil:** Most of the soil in Maharashtra formed from Deccan trap. The soils are black, dark, brown or reddish in color (black cottons soils or Regur's) are derived from Vindhyan and Gondwana formations.
**Climate:** The climate is quite pleasant for the greater part of the year with only short span of hot weather. The temperature ranges from 5$^{o}$C during January to 48$^{o}$C during May. The average rainfall varies from 1100 to 1600 mm .
**Vegetation:** The vegetation of the area is of South Indian moist deciduous type **(**Champion & Seth, 1968) .The plants are distributed in three different Zones.

**Materials and Methods:**

To study the plants diversity, plant exploration tours were conducted in different seasons. The area was surveyed extensively and intensively. The flowering and fruiting specimens were collected. Field observations regarding habit, habitat, color of flowers, local names, relative abundance, associated plants etc. were noted. Close up of flowering/ fruiting material along with their associated plants were photographed. Information about the medicinal uses of each plant to cure various diseases also noted local peoples and confirmed with the help of authentic reliable literatures. Plants were processed in customary way in the laboratory and identified in regional herbarium of Botanical Survey of India, Pune (*BSI*).

**Results:** The general survey of medicinal plants from Nawegaon National Park shows total 229 species comprising 71 families, 190 Genus including 207 species of dicots and 22 species of monocots. More stress has been given on plants used by tribals and locals for their medicinal purpose. Ethnobotanical data collected from tribals and local people from the area studied and incorporated under each plant based on information and literature.

**Table:-I- General Survey**

| | Families | Genus | Species |
|---|---|---|---|
| Dicot | 61 | 170 | 207 |
| Monocot | 10 | 20 | 22 |
| Total | 71 | 190 | 229 |

**Medicinal plants:** There are number of plants used for medicines, few of them are (c34) are mentioned in Table-II.

Table -II

| **S. No.** | **Name of the plant & family** | **Local names** | **Parts used for cure** |
|---|---|---|---|
| 1. | *Abrus precatorius* L. FABACEAE | Gunja | **Roots**-Cold, cough, sore throat. |
| 2. | *Abutilon indicum* (L.) Sweet MALVACEAE | Petari | **Leaves**-Diabetes. **Seeds**-Cough, piles, laxative. |
| 3. | *Acacia catechu* (L.f.) Willd. MIMOSACEAE | Khair | **Bark**-Asthma, Bronchitis, blood purifier, skin diseases. |

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| | | | |
|---|---|---|---|
| 4. | *Achyranthes aspera* L.<br>AMARANTHACEAE | Aghada | **Roots,Seeds**–Bronchitis, rheumatic , tooth ache.<br>**Whole plant**- Cough,, piles. |
| 5. | *Argemone mexicana* L.<br>PAPAVERACEAE | Pivla-dhotra | **Roots,Leaves,Seeds**-Scabies.<br>**Whole plant**- Jaundice. |
| 6. | *Aristolochia indica* L.<br>ARISTOLOCHIACEAE | Sapasan | **Roots**-Diarrhoea.<br>**Whole plant**-Snake-bite. |
| 7. | *Bombax ceiba* L.<br>BOMBACACEAE | Sawar | **Fruits**-Pain killer. Water extract of thorns for pimples. |
| 8. | *Bridelia retusa* (L.) Spreng.<br>EUPHORBIACEAE | Asana | **Leaves, Fruits**-Diabetes. |
| 9. | *Boswelliaserrata*Roxb.ex Coleb.<br>BURSERACEAE | Salai | **Bark**-Antiseptic,cold, stomach pain. |
| 10. | *Buchanania cochinchinensis* (Lour.) Almeida<br>ANACARDIACEAE | Charoli | **Seeds**-Digestive, brain tonic.<br>**Seed oil**-Protection against white ants. |
| 11. | *Butea monosperma* (Lam.) Taub.<br>FABACEAE | Palas | **Root bark**-Blood Pressure.<br>**Leaves**-Eye diseases.<br>**Flowers**-Cough, leprosy.<br>**Seeds**-Dysentery, ring worm. |
| 12. | *Caesalpinia bonduc* (L.) Roxb.<br>CAESALPINIACEAE | Sagargot a | **Seed oil**-Rheumatic pains, skin diseases. |
| 13. | *Capparis sepiaria* L.<br>CAPPARACEAE | Kanthata ra, Pachra | **Bark, roots**-Dropsy, Gout. |
| 14. | *Careya arborea* Roxb.<br>LECYTHIDACEAE | Kumbhi | **Bark**-Fistula, Stomach pain, snakebite<br>**Flowers**-Tonic after delivery to women.<br>**Calyx**-Cold, cough.. |
| 15. | *Celastrus paniculatus* Willd.<br>CELASTRACEAE | Malkang oni | **Bark**-Wounds. |
| 16. | *Cleistanthus collinus* (Roxb.) Benth. ex Hook.f.<br>EUPHORBIACEAE | Garari | **Bark**- Wound healing and skin disease. |
| 17. | *Cordia dichotoma* Forst. f.<br>BORAGINACEAE | Bhokar | **Bark**-Cough, sore throat.<br>**Fruits**-Cough, Chest pain, Urinary disorder. |
| 18. | *Elephantopus scaber* L.<br>ASTERACEAE | Rantamb aku | **Roots**-Tooth-ache, Vomiting, ulcer.<br>**Roots, Leaves**-Snake bite, Eczema, Dysentery. |
| 19. | *Gardenia gummifera* L.f<br>RUBIACEAE | Dikemali , Kamarri | **Gum**-Antiseptic, constipation. |
| 20. | *Gloriosa superba* L.<br>LILIACEAE | Khadyan ag | **Roots**-Leprosy, scabies, piles, snake bite. |
| 21. | *Helicteres isora* L.<br>STERCULIACEAE | Murud-sheng | **Roots**-Diabetes.<br>**Bark, fruits**-Dysentery. |
| 22. | *Hemidesmus indicus* (L.) Schult.<br>PERIPLOCACEAE | Anantvel | **Roots**-Stomach cure, skin disease. |
| 23. | *Holarrhena pubecens* (Buch.-Ham.) Wall. ex G. Don<br>APOCYNACEAE | Pandhra-kuda | **Roots**-Spleen, Urinary cure.<br>**Bark**-Bronchitis.<br>**Flower, seeds**-Skin disease. |
| 24. | *Jatropha gossypifolia* L.<br>EUPHORBIACEAE | Mogli-Erand | **Stem**-Tooth ache. |
| 25. | *Lannea coromandelica* (Houtt.) Merr.<br>ANACARDIACEAE | Moya, Shimti | **Bark**-cough, wounds.<br>**Leaves**-swelling, Elephantiasis.<br>**Gum**-edible. |
| 26. | *Mallotus philippensis* (Lam.) Muell.-Arg.<br>EUPHORBIACEAE | Kumkum | **Bark**-Leprosy.<br>**Fruits**-Abortion, purgative. |

| | | | |
|---|---|---|---|
| 27. | *Plumbago zeylanica* L. PLUMBAGINACEAE | Chitrak | **Roots**-Spleen, skin disease, piles, liver cure. **Root-bark**-antiperiodic. |
| 28. | *Pongamia pinnata* (L.) Pierre FABACEAE | Karanj | **Leaves**-Diarrhoea, fever **Bark**-piles, stomach pain **Seeds,Seed-oil**-Skin diseases. |
| 29. | *Pterocarpus marsupium* Roxb. FABACEAE | Chikna, pale-asan | **Gum**-Asthama in children **Stem, bark**-Bone fracture, tonic. **Leaves**-skin disease. **Flowers**-Urinary disorder. |
| 30. | *Rauvolfia serpentina* (L.) Benth. ex Kurz APOCYNACEAE | Sarpgandha | **Roots**-Blood pressure. **Leaf juice**-vomiting. **Whole plant**-snake bite. |
| 31. | *Solanum virginianum* L. SOLANACEAE | Kate-ringni Ran-wangi | **Berries vapour**-Tooth ache. |
| 32. | *Soymida febrifuga* (Roxb.) A. Juss. MELIACEAE | Rohan | **Bark**-Diarrhoea, dysentery. |
| 33 | *Terminalia bellirica* Roxb. COMBRETACEAE | Beheda | **Fruits,Seeds**-Asthma, Bronchitis, stomach disorder, piles, leprosy. |
| 34. | *Woodfordia fruticasa* (L.) Kurz LYTHRACEAE | Dhayti | **Flowers paste**-Injuries, dysentery, cough, small pox. **Fruits**-Tonic. |

**Discission:** Indigenous knowledge of medicinal plants is not properly documented or is scarcely recorded. Knowledgeable people have either died without divulging their knowledge on medicinal plants to others or refuse to part with Indigenous knowledge system for reason best known to them. Probably it was a sort of keeping secrecy. Protection of traditional medicinal knowledge is most important in the present scenario. Indigenous people and societies have not been able to obtain enough legal protection for their traditional knowledge and resources for various reasons. Industries/ academics somehow obtain legal rights for their application of traditional knowledge and resources. Thus, depriving the genuine beneficiaries for any benefit. The technologically poor but biodiversity-rich countries of the worlds lack the capacity/ facilities and money to adequately and immediately exploit the commercial potential of their traditional knowledge or to defend such knowledge. However, GATT (General Agreement on Tariffs and Trade) accord provides Intellectual Property Rights (IPRS) for formal innovators but not for informal innovators. Biodiversity prospecting is under taken by pharmaceutical and chemical industries based on the traditional knowledge of indigenous communities and seed companies earn high profits through royalties of seed of improved varieties.

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