



## Ethnobotanical plants used by Kokni tribal belonging to family Asteraceae from Nasik and Dhule district of Maharashtra

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### Abstract

The Kokni tribal residing in Nasik and Dhule districts of Maharashtra depends on plant wealth for their livelihood. The ethnobotanical study revealed that plants species belonging to Asteraceae family are used by the tribal as medicine for curing different ailments and as food. The present paper deals with floristic diversity of plants belonging to family Asteraceae growing in Nasik and Dhule districts of Maharashtra. Most of the species were seen in wild state but few occurred as common crop weeds like *Ageratum*, while *Glossocardia*, was found rarely and occurred mainly on hilly slopes. *Parthenium hysterophorus* was found to be the strongest weed in the areas under investigation. Nearly all the members were herbaceous and grow abundantly throughout the year in the area under study.

**Keywords:** Kokni, Asteraceae, tribal, ethnomedicine, Bhagat

### Introduction

The vital role the plants play in the life and economy of all forest dwelling tribes, rural and urban population is well known. They are traditionally providing food, medicine and other forest products for our daily needs. This knowledge has now emerged as a science of Ethnobotany. The Kokni are one of the important tribe of Maharashtra. The original name of the community was lost with their migration far back in the historical past. The name Kokni is said to be derived from Konkan, the western strip of Maharashtra.

Asteraceae is a large family of flowering plants that consists of over 32,000 known species in over 1,900 genera within the order Asterales. Most species of Asteraceae are herbaceous plants, and may be annual, biennial, or perennial, but there are also shrubs, vines, and trees. The family has a widespread distribution, from subpolar to tropical regions, in a wide variety of habitats. Their common primary characteristic is compound flower heads, technically known as capitula, consisting of sometimes hundreds of tiny individual florets enclosed by a whorl of protective involucre bracts. In India the family comprises 1149 taxa (including 999 species, 21 sub-species, 122 varieties and 7 formae) under 193 genera. Majority of the Indian Asteraceae grown in temperate regions of Himalaya and the north-east part of the country. The species majorly grow in open areas along road sides, agricultural fields, waste lands and forest fringes as annual or perennial weed.

### Materials and Methods

In the present study field surveys were conducted during 2021 to 2025 in tribal villages of Nasik and Dhule districts of Maharashtra. Field trips were organized in such a way as to encounter different tribal hamlets and forest pockets at regular intervals in different seasons. The information on plants was collected through arranging night meetings and dialogues with Bhagat and knowledgeable people. During the study, the questionnaire were prepared and first-hand information on the uses of the plants was gathered from the bhagats and tribal people. The plants used by the tribal for various ailments were collected from the field, pressed,

dried and mounted on the herbarium sheets. The plants were identified using Flora of Maharashtra and compared with the specimens in Blatter Herbarium, St. Xavier's College, Mumbai.

### Observations

*Acanthospermum hispidum* DC, Lakshminarsimhan & Sharma, Fl. Nasik 258, 1991; Singh *et al.*, Fl. Maharashtra State 2: 179, 2001<sup>[17]</sup>; Almeida, Fl. Maharashtra 3A: 65, 2001<sup>[12]</sup>; Patil, Fl. Dhule and Nandurbar Districts 317, 2003<sup>[13]</sup>.

#### “Katya”

Erect herb. Leaves opposite, cuneate, acute, serrate dentate, ovate, obovate or spatulate. Heads deflexed in leaf axils or in forks of branches. Rays yellow, disc pale yellow. Common in wastelands and fields.

**Fl. & Fr.:** July to October.

**GPS coordinates:** 20°54.645'N and 73°58.413'E

**Exsiccata:** SDK – 62, 387, 559

**Uses:** The seeds are crushed with seeds of *Achyranthes aspera* L. seeds and mixture is used to treat Kidney stones.

*Acmella paniculata* (Wall. ex DC.) R. K. Jansen, *Spilanthes paniculata* DC, Almeida, Fl. Maharashtra 3A: 137, 2001; Singh *et al.*, Fl. Maharashtra State 2: 244, 2001<sup>[17]</sup>; Lakshminarsimhan & Sharma, Fl. Nasik 280, 1991; Patil, Fl. Dhule and Nandurbar Districts 343, 2003<sup>[13]</sup>.

#### “Akkalkhar”

Herbs. Branches hairy. Leaves opposite, ovate lanceolate, crenate serrate or entire, 3 nerved. Flowers yellow in heterogamous heads. Common in wasteland and fields under cultivation.

**Fl. & Fr.:** September to March

**GPS coordinates:** 20°49.763'N and 74°1.344'E

**Exsiccata:** SDK – 759

**Uses:** Plant is boiled in water and extract is given for dysentery. Entire plant is crushed and paste is applied on sprains and insect bite. The root infusion is given for cough and cold. Flower heads are chewed for reducing cough.

*Ageratum conyzoides* L., Lakshminarsimhan & Sharma, Fl. Nasik 258, 1991; Almeida, Fl. Maharashtra 3A: 68, 2001<sup>[12]</sup>; Singh *et al*, Fl. Maharashtra State, 2: 181, 2001<sup>[17]</sup>; Patil, Fl. Dhule and Nandurbar Districts 318, 2003<sup>[13]</sup>.

“*Borandu*”

Herbs. Leaves opposite, ovate, subacute, margins ciliate, cuneate at base, hairy on both surfaces. Flowers white, in homogamous heads. Common on wasteland and in moist places.

**Fl. & Fr.:** Throughout the year.

**GPS coordinates:** 20°48.842'N and 74°7.734'E

**Exsiccata:** SDK – 87, 412, 517, 619

**Uses:** Leaf extract is used to cure stomach ache. The leaf paste is applied externally to cure cuts and wounds.

*Artemisia nilagirica* (C.B. Clarke) Pamp, Lakshminarsimhan & Sharma, Fl. Nasik 259, 1991; *Artemisia gratus* Wall.ex DC, Almeida, Fl. Maharashtra 3A: 70, 2001<sup>[12]</sup>; Singh *et al*, Fl. Maharashtra State, 2: 183, 2001<sup>[17]</sup>; Patil, Fl. Dhule and Nandurbar Districts 318, 2003<sup>[13]</sup>.

“*Honamba*”

Shrubs. Lower leaves, ovate, petioled; upper leaves 3-fid or entire, lanceolate. Heads greenish yellow, sessile or shortly pedicelled, in spiciform racemes combined into panicles. Common on hill slopes.

**Fl. & Fr.:** October to November

**GPS coordinates:** 20°47.667'N and 74°1.900'E

**Exsiccata:** SDK – 718, 766

**Uses:** The leaves are crushed and juice is administered through nostril to cure epilepsy. Leaves are rubbed on forehead to cure headache. Extract of leaves is given to cure cough and fever.

*Blumea eriantha* DC., Wight, Bot. Ind. 15: 1834; Cooke, Fl. Pres. Bombay 2: 22, 1904; Lakshminarsimhan & Sharma, Fl. Nasik 260, 1991; Almeida, Fl. Maharashtra 3A: 78, 2001<sup>[12]</sup>; Singh *et al*, Fl. Maharashtra State 2: 188, 2001<sup>[17]</sup>; Patil, Fl. Dhule and Nandurbar Districts 321, 2003<sup>[13]</sup>.

“*Buradi*”

Herbs; stem erect, terete, slender, more or less pubescent, dichotomously branched. Leaves irregularly toothed, elliptic oblong, acute, silky villous. Heads yellow in dichotomous cymes. Achenes minutely hairy. Common in open areas among grasslands and along road sides.

**Fl. & Fr.:** December to March.

**GPS coordinates:** 20°44.506'N and 73°57.033'E

**Exsiccata:** SDK – 767, 774

**Uses:** Leaves are crushed by hand and juice is dropped on wounds. Leaf decoction is used to cure stomach ache. Entire plant is crushed and extract is given to cure fever.

*Caesulia axillaris* Roxb, Lakshminarsimhan & Sharma, Fl. Nasik 262, 1991; Singh *et al*, Fl. Maharashtra State 2: 197, 2001; Almeida, Fl. Maharashtra 3A: 86, 2001<sup>[12]</sup>; Patil, Fl. Dhule and Nandurbar Districts 324, 2003<sup>[13]</sup>.

“*Bondala*”

Herbs. Leaves alternate, lanceolate, sessile, glabrous on both surfaces. Flowers pale-blue or white. Very common weed of cultivated fields, wastelands and along margin of ponds and ditches.

**Fl. & Fr.:** May to December

**GPS coordinates:** 21°4.402'N and 74°3.027'E

**Exsiccata:** SDK – 106, 451, 588

**Uses:** Leaves are chewed directly for cough and weakness. Roots are chewed twice a day for the treatment of piles. Entire plant is crushed and given in sugar once a day for 5 days for bleeding piles. Leaves are used as vegetable.

*Cyathocline purpurea* (Buch. - Ham. ex Don) Kuntze., Lakshminarsimhan & Sharma, Fl. Nasik 264, 1991; Almeida, Fl. Maharashtra 3A: 94, 2001<sup>[12]</sup>; Singh *et al*, Fl. Maharashtra State 2: 203, 2001<sup>[17]</sup>; Patil, Fl. Dhule and Nandurbar Districts 326, 2003<sup>[13]</sup>.

“*Runghal*”

Erect, slender, aromatic herbs. Leaves sessile, pinnatifid. Heads rose purple, in corymbose panicles. Frequent along rivers, streams, harvested fields and in drying ditches and ponds.

**Fl. & Fr.:** September to June.

**GPS coordinates:** 20°46.771'N and 74°1.39'E

**Exsiccata:** SDK – 22, 480

**Uses:** The roots are crushed and extract is consumed orally to stop stomach ache. Kokni tribal from Dhule district use this plant for worshipping the newly harvested crops.

*Cyanthillium cinereum* (L.) H. Rob, *Vernonia cinerea* (L.) Less, Lakshminarsimhan & Sharma, Fl. Nasik 282, 1991; *Vernonia cinerea* (L.) Less, Singh *et al*, Fl. Maharashtra State 2: 203, 2001<sup>[17]</sup>; *Vernonia cinerea* (L.) Less, Almeida, Fl. Maharashtra 3A: 94, 2001<sup>[12]</sup>; *Vernonia cinerea* (L.) Less, Patil, Fl. Dhule and Nandurbar Districts 347, 2003<sup>[13]</sup>.

“*Pandharya*”

Herbs. Leaves simple, alternate, ovate elliptic or lanceolate, acute or mucronate at apex, margins dentate. Flowers greenish violet, in small heads. Common along road sides and in open areas.

**Fl. & Fr.:** September to June.

**GPS coordinates:** 20°49.936'N and 74°4.701'E

**Exsiccata:** SDK – 193, 609

**Uses:** The entire plant is crushed by hand and paste is applied on cuts and wounds.

Leaves are crushed and paste is applied on forehead to cure headache.

*Echinops echinatus* Roxb, Lakshminarsimhan & Sharma, Fl. Nasik 265, 1991; Singh *et al*, Fl. Maharashtra State 2: 207, 2001; Almeida, Fl. Maharashtra 3A: 99, 2001<sup>[12]</sup>; Patil, Fl. Dhule and Nandurbar Districts 327, 2003<sup>[13]</sup>.

“*Utkattya*”

Much branched, rigid, deep rooted, thistle like, cotton woolly herbs. Leaves alternate, lyrate sinuate, spinescent, amplexicaul, white woolly beneath. Heads white, solitary, spinous. Very common in wasteland around fields, roadsides and near villages.

**Fl. & Fr.:** October to May.

**GPS coordinates:** 20°47.583'N and 74°4.457'E

**Exsiccata:** SDK – 195, 406, 649

**Uses:** Juice of leaves is used for stomach ache. Root extract is administered orally to cure scorpion sting. Roots are fried and eaten for cough and cold. Roots are soaked in water for 15 minutes and then crushed in water and extract is given 3 times a day for fever and stomach ache. Roots are crushed with water to make paste and this paste is applied for rheumatism and muscular pain.

*Eclipta prostrata* (L.) L, Lakshminarsimhan & Sharma, Fl. Nasik 266, 1991; Almeida, Fl. Maharashtra 3A: 99, 2001

[12]; Singh *et al*, Fl. Maharashtra State 2: 207, 2001 [17]; Patil, Fl. Dhule and Nandurbar Districts 328, 2003 [13].

“*Makha*”

Herbs. Leaves opposite, sessile, ovate lanceolae, acute at apex, base tapering, both surfaces hairy. Flowers white, in heterogamous heads. Bracts obtuse. Pappus absent. Achenes cuneate, compressed. Common weed of cultivated fields and wastelands.

**Fl. & Fr.:** Throughout the year.

**GPS coordinates:** 21°5.149'N and 74°2.294'E

**Exsiccata:** SDK – 415, 560

**Uses:** Leaf juice is applied on boils. Entire plant extract is given to reduce body heat. Leaf juice with honey is given for giddiness. Plant is crushed and extracted juice is mixed with Coconut oil and heated, applied to stop hair fall. The leaf extract is given for 5 days to cure Jaundice.

*Emilia sonchifolia* (L.) DC. ex Wight, Lakshminarsimhan & Sharma, Fl. Nasik 267, 1991; Singh *et al*, Fl. Maharashtra State 2: 209, 2001 [17]; Almeida, Fl. Maharashtra 3A: 101, 2001 [17]; Patil, Fl. Dhule and Nandurbar Districts 329, 2003 [13].

“*Dhamni*”

Erect, glabrous herbs. Leaves variable, radical ones ovate lanceolate or obovate or spathulate, entire or crenate; cauline nearly amplexicaul and auricled, acute or obtuse. Heads bright purple, in lax corymbs. Occasional in open forest and wastelands.

**Fls. & Fr.:** August to December.

**GPS coordinates:** 20°53.534'N and 74°7.936'E

**Exsiccata:** SDK – 277, 423

**Uses:** Plants are dried under sun and crushed to make powder. This powder is given twice a day with water or milk to the person suffering from asthma. Leaves are crushed and extract is given to reduce fever and applied on wounds.

*Glossocardia bosvallia* (L. f.) DC, Lakshminarsimhan & Sharma, Fl. Nasik 268, 1991; Singh *et al*, Fl. Maharashtra State 2: 213, 2001 [17]; Almeida, Fl. Maharashtra 3A: 108, 2001 [12]; Patil, Fl. Dhule and Nandurbar Districts 331, 2003 [13].

“*Mirgi kand*”

Annual herbs, prostrate or erect. Leaves bipinnatisect. Heads long, yellow. Pappus awns glabrous or setose, spreading at an acute angle or at right angles. Frequent along river banks and nallas. Sometimes grows along cultivated fields.

**Fl. & Fr.:** August to December.

**GPS coordinates:** 21°2.549'N and 74°11.239'E

**Exsiccata:** SDK – 738, 776

**Uses:** Entire plant is crushed and boiled in water. The extract is filtered and then fermented and used as an alcoholic drink by the tribal. Root stock is boiled in water with sugar and tea powder and the decoction is given to alcoholic person to reduce the effect of alcohol. Young leaves are used as vegetable.

*Lagascea mollis* Cav, Lakshminarsimhan & Sharma, Fl. Nasik 270, 1991; Singh *et al*, Fl. Maharashtra State 2: 222, 2001 [17]; Almeida, Fl. Maharashtra 3A: 118, 2001 [12]; Patil, Fl. Dhule and Nandurbar Districts 335, 2003 [13].

“*Phulari*”

Annual herbs. Leaves ovate, upper surface coarsely hairy, lower surface densely silky, acute at apex, margins entire or serrulate. Heads clustered at ends of branches on long peduncles. Pappus as a short fimbriate tuft. Common in wasteland and cultivated fields.

**Fl. & Fr.:** July to December.

**GPS coordinates:** 20°51.836'N and 74°1.043'E

**Exsiccata:** SDK – 773

**Uses:** Leaves are crushed and paste is applied on wounds. Fresh fruits are eaten by the tribal.

*Launaea procumbens* (Roxb.) Ramayya & Rajagopal, Lakshminarsimhan & Sharma, Fl. Nasik 271, 1991; Singh *et al*, Fl. Maharashtra State 2: 226, 2001 [17]; *Launaea obtusis* (DC.) Clarke, Almeida, Fl. Maharashtra 3A: 121, 2001 [12]; Patil, Fl. Dhule and Nandurbar Districts 337, 2003 [13].

“*Pathari*”

Glabrous herbs. Leaves, mostly radical, in rosette, oblanceolate, lyrate or rarely entire, lobes rounded or actue, with cartilaginous teeth. Heads pale yellow, narrowly cylindric. Common weed in fields and wastelands.

**Fl. & Fr.:** September to April

**GPS coordinates:** 20°49.412'N and 74°5.456'E

**Exsiccata:** SDK – 254, 416

**Uses:** Roots are given to victim of snake bite to chew. After chewing the roots, the victim is taken to ‘Bhagat’ who cures the victim by saying ‘*Mantras*’. The roots are used as antidote for snake bite. Leaves are used as vegetable for body ache, cough and cold. Leaves are eaten to reduce piles. Roots extract is given for weakness and night blindness.

*Parthenium hysterophorus* L, Lakshminarsimhan & Sharma, Fl. Nasik 272, 1991; Almeida, Fl. Maharashtra 3A: 124, 2001 [12]; Singh *et al*, Fl. Maharashtra State 2: 227, 2001 [17]; Patil, Fl. Dhule and Nandurbar Districts 337, 2003 [13].

“*Congress gavati*”

Herbs. Leaves alternate, much dissected, margins entire, pubescent on both surfaces. Heads white, in terminal or axillary peduncles, bracteate. Common weed growing throughout the districts.

**Fls. & Fr.:** September to January.

**GPS coordinates:** 20°49.737'N and 74°4.791'E

**Exsiccata:** SDK – 23, 589

**Uses:** Roots are chewed and applied twice day to relieve pain from scorpion bite.

*Pentanema indicum* (L.) Ling, *Vicoa indica* (L.) DC, Lakshminarsimhan & Sharma, Fl. Nasik 279, 1991; Almeida, Fl. Maharashtra 3A: 126, 2001 [12]; Singh *et al*, Fl. Maharashtra State 2: 229, 2001 [17]; Patil, Fl. Dhule and Nandurbar Districts 338, 2003 [13].

“*Bhangsar*”

Suffrutescent herbs. Leaves sessile, linear, linear-lanceolate, appressedly hairy, pale beneath, dilated and with rounded auricles at base, entire. Heads bright yellow, solitary, peduncled. Common on hill slopes and in cultivated fields.

**Fl. & Fr.:** December to February.

**GPS coordinates:** 20°49.752'N and 74°4.824'E

**Exsiccata:** SDK – 122, 255

**Uses:** The plant paste is applied on fractured bones. Roots are used as tooth brush to cure toothache. The plant is dried and crushed to paste and given to females in water once in a month as a contraceptive. The stem of plant is used for

worshipping “*Dongarya Dev*” (Mountain god) by Kokni tribal. The stem piece is kept on plate made of amalgam of Zinc and copper and wax is applied on stem piece. The stem is kept vertical on plate and pulled by both hands which makes a vibrating sound. This is done to entertain the “*Dongarya Dev*” and used when a religious tale is told during someones death, overnight. Plant is used as fodder for cattles.

*Sonchus oleraceus* (L.) L, Lakshminarsimhan & Sharma, Fl. Nasik 279, 1991; Almeida, Fl. Maharashtra 3A: 134, 2001<sup>[12]</sup>; Singh *et al*, Fl. Maharashtra State 2: 242, 2001<sup>[17]</sup>; Patil, Fl. Dhule and Nandurbar Districts 342, 2003<sup>[13]</sup>.  
“*Mhatara*”

Annual herbs, erect. Leaves sessile, oblong or obovate. Heads long, yellow, in terminal umbellate cymes. Achenes ovoid.

**Fl. & Fr.:** September to May

**GPS coordinates:** 20°50.016’N and 74°4.017’E

**Exsiccata:** SDK – 793

**Uses:** Leaves are crushed by hand and juice is applied on wounds. Plant is used as fodder for cattles.

*Sphaeranthus indicus* L., Lakshminarsimhan & Sharma, Fl. Nasik 279, 1991; Almeida, Fl. Maharashtra 3A: 136, 2001<sup>[12]</sup>; Singh *et al*, Fl. Maharashtra State 2: 242, 2001<sup>[17]</sup>; *Sphaeranthus senegalensis* DC, Patil, Fl. Dhule and Nandurbar Districts 342, 2003<sup>[13]</sup>.

“*Bothada*”

Herbs. Leaves alternate, oblong, sessile, decurrent, serrate at margins. Flowers purple, in heterogamous heads, peduncle glandular; bracts acuminate. Common in drying fields, ditches, ponds, along river banks etc.

**Fl. & Fr.:** October to April.

**GPS coordinates:** 20°55.476’N and 73°59.486’E

**Exsiccata:** SDK – 278, 494

**Uses:** Entire plant is crushed and extract is administered orally to cure Jaundice. Young shoots and leaves are used as vegetable.

*Tridax procumbens* L., Lakshminarsimhan & Sharma, Fl. Nasik 281, 1991; Almeida, Fl. Maharashtra 3A: 142, 2001<sup>[12]</sup>; Singh *et al*, Fl. Maharashtra State, 2: 247, 2001<sup>[17]</sup>; Patil, Fl. Dhule and Nandurbar Districts 346, 2003<sup>[13]</sup>.

“*Unhali*”

Herbs; stem and branches hairy. Leaves ovate elliptic, acute, deeply inciso-dentate or pinnatisect, clothed with short hairs on both sides. Heads yellow, solitary. Very common in wastelands, and along roadside.

**Fl. & Fr.:** Throughout the year.

**GPS coordinates:** 20°45.127’N and 73°58.836’E

**Exsiccata:** SDK – 279, 549, 620

**Uses:** Entire plant is crushed and eaten with black crab for Kidney stone and weakness. Entire plant is crushed and juice is given for 7 days to cure Jaundice. Leaves are chewed for curing hyper acidity. The plant is burnt and ash is mixed with Coconut oil and applied on wounds. Fresh leaves are crushed by hand and applied on wounds.

*Xanthium strumarium* L., Almeida, Fl. Maharashtra 3A: 148, 2001<sup>[12]</sup>; *Xanthium indicum* Koen, Singh *et al*, Fl. Maharashtra State, 2: 251, 2001<sup>[17]</sup>. Lakshminarsimhan & Sharma, Fl. Nasik 284, 1991; Patil, Fl. Dhule and Nandurbar Districts 349, 2003<sup>[13]</sup>.

“*Lepadi*”

Herbs with short hairs. Leaves broadly triangular-ovate or suborbicular, acute, often 3 lobed, rough with appressed hairs on both sides. Heads in terminal and axillary racemes. Commonly found on wasteland and in fields

**Fl. & Fr.:** January to April.

**Exsiccata:** SDK – 495, 550

**Uses:** Juice from leaves is mixed with ‘Jaggery’ and applied on boils. Roots and leaves of small plants are chewed directly to make paste. Then it is kept on tooth to reduce toothache. The fruits are hanged around ear to relieve headache. The leaves are crushed and juice is dropped in ear to cure ear ache. Young leaves are used as vegetable.

## Conclusion

Traditional knowledge based on plants is now widely used to find novel medication sources, and it is evident that the Asteraceae family can provide a foundation for future medical study. The study of these medicinal plants and their traditional uses throughout the world has drawn more attention in the last few decades. As a result, more research should be done to fully comprehend its characteristics, safety, and effectiveness. To find the active principles, their benefits, and their uses, phytochemical studies and other potentialities should be expanded upon. This will eventually reveal novel medications and other unidentified compounds. The demand for a viable alternative supply of therapeutic plants will be satisfied by this contribution. According to the study, the ethnobotanical plant diversity in the districts of Nasik and Dhule is huge and researchers, foresters, chemists, and other multidisciplinary projects can benefit from the plant's raw database.

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