International Journal of Research and Reviews in Pharmacy and Applied science

www.ijrrpas.com

SOME HERBAL ABORTIFACIENT AND ANTIDIABETIC USED BY THE RURAL PEOPLE OF HINGANGHAT TAHSIL

J. J. Shende, M. N. Mhaiskar and B. M. Rajurkar*

R. S. Bidkar College, Hinganghat, District: Wardha (MS) 442301

ABSTRACT

The present study deals with the documentations and study of abortifacient and antidiabetic, used by rural people in Hinganghat tahsil of Wardha district (MS). 19 plant species as abortifacient whereas 13 plant species were documented as antidiabetic.

Key words: abortifacient; antidiabetic; herbal medicine; ethnobotany

INTRODUCTION

The present paper is an attempt to list the plants with abortifacient and antidiabetic. History showed that medicinal plants have been used in traditional healing around the world for a long time to treat diabetes. Herbal healing is the most ancient form of healing known to mankind. The physical or chemical substances, which induce abortion, are known as the abortifacient.

India is very vast country, dominated by variety of flora and fauna. One of the largest concentrations of tribal people in India is in the hilly tracts of several states. They depend for all their requirements on the natural forests products available in their vicinity.

Ethnobotany comes into being when the earliest man observed animals eating certain plants and he gathered and hunted for his food. This knowledge got wider use and success in experiments on humans and led to out recognized food and medicine while we are all familiar with the common food crops like wheat, rice, maize, and jowar and fruits tree like mango, guava, apple, orange and pear. There are hundreds of other species that grow in the wild. Rural families also earn cash by collectively wild fruits, seeds, flowers, tubers, bark, leaves, fibers, gums, lac, honey, bees wax, herbal drugs etc. and selling them in local market. Many of them have great market potential for the growing urban centre in tropical countries.

The knowledge of ethnobotany is used in India since ancient times. All the traditional systems of medicine have their roots in ethnobotany. This subject has originated through the primary and basic need of human beings. Similarly the traditions of people, their faith in plants, use of the plants in curing many diseases and solving the problem of life helped the further development of this subject.

The term ethnobotany was first used by J. W. Harshberger in 1986 to indicate the plants used by the arboriginals. It was in 1976 that Robbins et al. who promulgated the broad definition of the term ethnobotany which went beyond more identification and cataloguing of plants used by primitive people and attributed to this discipline a study and evaluation of the knowledge of all phases of plants life amongst primitive societies, and the effects of the vegetal environments upon the life, customs, belief and history of the people of such societies. Some authors like C. B. Heiser Jr. (1995) define ethnobotany as the study of plants in relation of people, and include both wild and domesticated plants. Plotkin (1995) defined ethnobotany as, the study of tribal people and their utilization of tropical plants.

Ethnobotanical research leads us to new or less known medicinal herbs of traditional medicine, gives clues for new material for pharmacological and clinical research, provides data on new local names and new distributional areas of raw drugs and generally such materials which are easily available and cheap.

The present paper deals with 32 plants which are medicinally used by tribals as well as rural people. They are used as an abortifacient and antidiabetic. Their botanical names, local name, families, parts used and botanical description mentioned separately.

Study area

The present study has been carried out in Hinganghat of Wardha district. It is one of the tahsils of Wardha district in the state of Maharastra. It lies between $20^{0}18^{|}$ to $20^{0}49^{|}$ N and $78^{0}32^{|}$ to $79^{0}14^{|}$E. it extends over an area of 1888 aq. Kms. (53000 acres) 22.89 sq. miles (59.28 sq. kms.) of forests.

MATERIALS AND METHODS

Ethnobotany is the study of the relationship between man and their surrounding plants. In order to understand the plant human interaction and the role plant play in the lives of tribals one has to live among them. The field trips were conducted as per methodology suggested by Schultes (1962), Lipp (1989). Survey in different localities of Hinganghat tahsil was conducted by regular intervals and information of the plants regarding their medicinal use were recorded from vaidus, elder persons and common people; however the uses of plants in specific rituals and the customs, traditions were recorded. The photographs were taken in natural condition for the further study and also the fresh specimens of the plants identified with the help of the flora of Nagpur district (Ugemuge, 1986) and flora of Maharashtra (Almeida, 1996).

RESULT

Extensive field tours were undertaken personally in order to make the spot study of the plants used by the tribal. The information was collected from local inhabitants and medicine men. Repeated queries were made to get the information confirmed. The results of the study area were arranged alphabetically under the respective family, brief description of plants, along with local names and their ethnobotanical uses were enumerated. However the collected plant species are classified under the following heads as per their ethnomedicinal values i.e. abortifacient and antidiabetic.

Plants used as Abortifacients

1. Annona squamosa L.
   Family: Annonaceae
   Vernacular name: Sithphal
   Part Used: Powdered seeds
   Botanical description: Small trees or shrubs, leaves oblong or oblong lanceolate, acute, flowers greenish, mostly leaf opposed, fruits green ovoid, tubercled or with projecting ovoid aneales, seeds shining, brown or black.

2. Achyranthus aspera L.
   Family: Amaranthaceae
   Vernacular name: Chirchita, kutri
   Part Used: The decoction of the roots
   Botanical description: Erect herbs, leaves ovate, acute or acuminate, flowers greenish white in elongate spikes, fruits oblong or ovoid, pointed, utricle, enclosed by hard perianth, seeds brown.

3. Aristolochia bracteata L.
   Family: Aristolochiaceae
   Vernacular name: Kidamar
   PartUsed: Powder of dried roots

Botanical description: Perennial scandent shrubs, leaves reiniform or broadly ovate, usually obtuse, cordate at the base with a wide shallow sinous, flowers solitary, dark purple, capsules oblong, ellipsoid, 12-ribbed, glabrous, seeds deltoid with slightly cordate base.

4. Calotropis gigantea L.
   Family: Ascelpiadaceae
   Vernacular name: Rui
   Part Used: Milky latex
   Botanical description: Branched, short shrubs, bark yellowish, cracked, branches and leaves beneath clothed with white cottony pubescence, leaves elliptic-oblong or obovate, acute, flowers white or purplish in lateral and terminal corymbs. Follicles thick, green falcately lanceolate, seeds brown, broadly ovate, flattened, minutely tomentose.

5. Calotropis procera Ait.
   Family: Asclepiadaceae
   Vernacular name: Rui
   Part Used: Milky latex
   Botanical description: Erect shrubs, young branches clothed with white cottony tamentum, leaves oblong, elliptic or obovate and abruptly acuminate, thick, flowers white with purple blotches, in lateral and terminal corymbs, comparatively smaller than those of C. gigantea, follicles, subglobose, falcately ellipsoid, green seeds, broadly ovate, acute, flattened, light brown.

6. Daucus carota L.
   Family: Apiaceae
   Vernacular name: Gajar
   Part Used: Fleshy root
   Botanical description: Annual or biennial, bristly herbs with erect, much branched stem, fleshy tap root, leaves pinnately decompounds on long petioles expanded at the base into an amplecicaute sheath, flower white or yellowish, small, numerous, borne in large terminal many rayed, more or less globose umbels, fruits oblong, bristly along ribs.

7. Nerium indicum L.
   Family: Apocynaceae
   Vernacular name: Kaner
   Part Used: Root extract
   Botanical description: Milky shrubs, leaves whorled, thick, dark green, linear, lanceolate, apex acute, flowers white, red, sweet smelling, follicles lanceolate, seeds oblong, villous with terminate coma.

8. Grangea maderaspatana L.
   Family: Asteraceae
   Vernacular name: Mastaru
   Part Used: The root
   Botanical description: Prostrate, tuffed, annual herbs with sticky hairs, leaves sessile, sinuately pinnatified with thick rounded lobes, heads yellow, solitary and terminal, globose, disciform, heterogamous, achenes compressed, glandular and tipped by hairy tubular pappus.

9. Trianthema portulacastrum L.
   Family: Aizoaceae
   Vernacular name: Kaparkhuti
   Part Used: Root
   Botanical description: Erect, annual, leaves 2-3 pinnate, ultimate segments linear, flower white, in compound, umbels, cremocarp, ovoid, muricate, compressed.

10. Cuscuta reflexa Roxb. Cor.
    Family: Cuscutaceae
    Vernacular name: Amarvel
    Part used: Powdered seeds
    Botanical description: Leafless, parasitic twine with fleshy branches forming dense yellow mass on host plants, flowers pale, white, solitary, clustered or in racemes, capsule succulents.

11. Momordica charantia L.
    Family: Cucurbitaceae
    Vernacular name: Karle
    Part used: Roots
    Botanical description: Annual climber, stem grooved, hairy, leaves 5-7 lobed, tendril simple, flowers monoecious, yellow, solitary axillary, fruit tubercled, bitter.

12. Cucumis trigonus Roxb.
    Family: Cucurbitaceae
    Vernacular name: Jangli indrayan
    Part used: Root extract
    Botanical description: Perennial, prostrate, monoecious, herbs, tendril simple, leaves palmately 5-lobed, base cordate, margin cartilaginous, flowers yellow, male flowers usually in clusters, females solitary, fruit ellipsoid, pale yellow when ripe with 10 green strips.

13. Carica papaya L.
    Family: Caricaceae
    Vernacular name: Papai
    Part used: Milky juice and unripe fruit
    Botanical description: Small trees with soft succulent trunk and milky juice, leaves very large, palminerved, palmately lobed, flowers creamy yellow a dioecious, male flowers in long, drooping panicles and female flowers solitary or in short clusters.

14. Ricinus communis L.
    Family: Euphorbiaceae:
    Vernacular name: Arandi
    Part used: Seeds
    Botanical description: Tall evergreen shrubs or small trees with hollow stem, leaves large palmately 5-11 lobed, pellate, orbicular, flowers greenish, white or reddish, monoecious, in terminal panicles, capsules globose, covered with brown soft hairs, cocci 3, 2-valved, seed oblong grey, mottled with brown, shining.

15. Abrus precatorius L.
    Family: Fabaceae
    Vernacular name: Gunja
    Part used: Leaves
    Botanical description: Pretty twining shrubs, leaflets 12-16 pairs, rachis ending in a short spur, leaves with a sweet taste, flowers pinkish-white, crowded in many flowered racemes from a node, pods oblong, apex trumneate, strongly beaked, seeds 5-6, round, polished.

16. Moringa oleifera Lamk.
    Family: Moringaceae
    Vernacular name: Mungana
    Part used: Roots and Barks
    Botanical description: Medium sized tees with grey white bark, leaves usually 3 pinnate, leaflets obovate, flowers pale white, fragrant, in axillary panicles, pods elongates, ribbed, straight, seeds winged, 3 angled.

17. Jasminum grandiflorum L.
    Family: Oleaceae
    Vernacular name: Chameli
    Part used: Seeds

Botanical description: Scandent or twining shrubs, stem and branches grooved glabrous, leaves pinnate, leaflets equal, the leaflets longer and petiolated, elliptic or ovate, acute or acuminate, flowers fragrant, dichotomous cymes.

18. Plumeria acuminate L.
    Family: Plumbaginaceae
    Vernacular name: Champa
    Part used: Branches
    Botanical description: Medium or small trees with rough bark and white juice, leaves elliptic or more often oblanceolate, acuminate, thin, coriaceous, flowers white or pale yellow, fragrant, in large terminal cymes, shorter than leaves.

19. Anthocephalus indicus Lamk.
    Family: Rubiaceae
    Vernacular name: Kadam
    Part used: Flowers and roots
    Botanical description: Large tree with straight trunk and spreading branches leaves elliptic oblong or ovate with 8-12 main halves, base subcordate, flowers orange coloured, fragrant, in terminal globular heads, fruits yellow after ripening.

Plants used as Antidiabetics

1. Catharanthus roseus L.
   Family: Apocynaceae
   Vernacular name: Sadaphuli
   Part Used: Leaf extract
   Botanical description: Erect bushy herbs, 40-80 cm high, leaves oblong-elliptic or oblanceolate, obtuse, apiculate, shining green, flowers rosy or white axillary, solitary or in pairs, follicles oblong, cylindric, shortly beaked, longitudinally ribbed, muriculate.

2. Coccinia cordifolia Cogn.
   Family: Cucurbitaceae
   Vernacular name: Tondale
   Part Used: The fresh fruits are eaten.
   Botanical description: Large climbing shrubs, leaves shining 3-5 lobed, pellucid dotted above, gland dotted on lower surface, scabrid, flowers white, large, dioecious, male flowers solitary or in a cluster of 2-4 female flowers axillary solitary, fruit fleshy, smooth, ovoid or oblong, bright red when ripe, seeds embedded in red pulp.

3. Momordica charantia L.
   Family: Cucurbitaceae
   Vernacular name: Karle
   Part Used: Fruit
   Botanical description: Annual climber, stem grooved, hairy, leaves 5-7 lobed, tendril simple, flowers monoecious, yellow, solitary axillary, fruit tubercled, bitter.

4. Momordica dioica Roxb.
   Family: Cucurbitaceae
   Vernacular name: Kartoli
   Part Used: Fruit
   Botanical description: Perennial, tendril climbers with tuberous roots, leaves cordate at base, entire or 3-5 lobed, flowers yellow, large, dioecious, male flowers solitary, enclosed by the bract, female flowers solitary, fruits ellipsoid acute or ovoid, densely echinate with soft spines seeds many.

5. Ficus racemosa L.
   Family: Moraceae
   Vernacular name: Umbar
   Part Used: Roots
   Botanical description: Evergreen trees, leaves ovate-oblong or elliptic lanceolate, acute at apex, base rounded or subcordate, receptacle shortly pendunculate, on short leafless warty branches, pyriform, orange red when ripe, achenes small, minutely tuberculate.

6. Ficus benghalensis L.
   Family: Moraceae
   Vernacular name: Wad
   Part Used: Bark
   Botanical description: Large trees, sending down roots from the branches, bark grey, leaves large, ovate, or bicular or elliptic, with rounded or subcordate 3-5 nerved base, receptacle sessile, in pairs, axillary, subglobose, scarlet when ripe, puberculous.

7. Syzygium cumini L.
   Family: Myrtaceae
   Vernacular name: Jambhul
   Part Used: Fruit

Botanical description: Large trees with smooth grey bark, leaves shining pale green, lanceolate, elliptic, oblong and showing intramarginal nerves, flowers whitish in cymes, berries dark purple, smooth juicy, subglobose, seed one, globose or oblong cylindric, large.

8. Pterocorpus marsupium Roxb.
   Family: Fabaceae
   Vernacular name: Bija
   Part Used: Bark
   Botanical description: Large deciduous, trees with rough bark, leaves 5-7 foliate, leaflets oblongs or elliptic, obtuse, flowers yellow in a panicle, pods circular, winged all around enclosing a single seed, flat.

9. Trigonella foenum-graecum L.
   Family: Fabaceae
   Vernacular name: Methi
   Part Used: Powdered seeds
   Botanical description: Erect, annual, herbs, leaves trifoliate, leaflets toothed, flowers pale yellow pods with a long, persistent beak, many seeded.

10. Madhuca longifolia Koen.
    Family: Sapotaceae
    Vernacular name: Moh
    Part used: The decoction of bark
    Botanical description: Large deciduos trees with dull black bark, leaves clustered at the end of branches, elliptic, obovate or broadly lanceolate, acute, flowers cream coloured, in dense fascidles, sweet scented, fruits fleshy, ovoid, berry, greenish, brown tomentose.

11. Scoparia dulcis L.
    Family: Scorphulariaceae
    Vernacular name: Mithipatti
    Part used: Leaves and soft shoot
    Botanical description: Erect, branched herbs, about 30-40 cm high, leaves opposite, or 3-nately whorled, elliptic obovate, serrate, flowers small, white, generally 3 per whorl of leaves on long pedicels, capsules very small, subglobose, seed many.

12. Kickxia ramosissima Wall.
    Family: Scorphulariaceae
    Vernacular name: Bhintglodi

Part used: Whole plant
Botanical description: Much branched, diffuse herbs, lower leaves ovate, angularly lobed, upper narrow lanceolate, hastate, margin slightly hairy, flowers yellow, solitary on slender axillary stalks, capsules ovoid, opening by pores at the top, glabrous.

13. Helicteres isora L.
Family: Sterculiaceae
Vernacular name: Marorphali
Part used: The juice of root is given.
Botanical description: Much branched shrubs, young branches rough with scattered stellate hairs, leaves oblong, obovate or roundish, 5-nerved, irregularly serrate, flowers irregular, red, in axillary clusters, 2-6 together, follicles linear, spirally twisted, together into the form of a screw, tomentose, seeds numerous, angular.

DISCUSSION AND CONCLUSION

In the present study, medicinal uses of 32 plants used by the villagers of Hinganghat tahsil of Wardha district are given. All these species belong to dicotyledons. Family wise analysis revealed that Cucurbitaceae is dominant families with five species followed by Ascelpiadaceae, Apocynaceae, Fabaceae, Moraceae and Scophulariaceae with two species each, Annonaceae, Amaranthaceae, aristolochiaceae, Apiaceae, Asteraceae, Aizoaceae, Cuscutaceae, Cariaceae, Euphorbiaceae, Moringaceae, Oleaceae, Plumbaginaceae, Rubiaceae, Myrtaceae, Sapotaceae and Sterculiaceae with one species each. The disease-wise analysis of the taxa collected showed that 19 plant species are used as abortifacient and 13 plant species used as antidiabetic. However plant species possessing other medicinal values are also having but more emphasis was given to abortifacient and antidiabetic properties of the plants.

Mali et al. (2006) 20 angiosperm species have been reported, Shah et al. (2009) reported 36 medicinal plants for abortifacient, Mitra and Mukherjee (2009) 22 species of angiosperm plants has documented against the abortifacient, Murthy and Venkaish (2010) listed 33 plant species belonging to 29 genera and 26 families are used as abortifacient by the tribal people of Andhra Pradesh and Dhore et al. (2012) listed 21 plant species are used as abortifacient.

Grover et al. (2002) 45 plants species have been mentioned, for anti diabetic, Phani and AshokKumar (2009) reported 25 medicinal plants, Malviya et al. (2010), Kavishankar et al. (2011) reviewed 136 plants for antidiabetic and Thirumalai et al. (2012) reported 41 medicinal plants for anti-diabetic.

The information of medicinal plants was collected based on interview of villagers and listed 19 plants species for abortifacient and 13 plants species for antidiabetic purposes. However, there are some unexplored regions which need further study, attention and documentation.

REFERENCE

1. Almeida, M. R. (1996). A Flora of Maharastra Vol. I Orient press, Mumbai.
2. Dhore, M., Dabhadkar, D., Zade, V. and Dhore, M. (2012). Documentation of Fertility Regulatory Ethnomedicinal Plants used by Tribal's of Yavatmal District, Maharashtra, India. International Journal of Scientific and Research Publications Vol. 2 issue 3.
3. Grover, J. K., Yadav, S. and Vats, V. (2002). Medicinal plants of India with anti-diabetic potential. J. Ethnopharmacol, **81(1):**81-100.
4. Harshberger, J. W. (1986). The purpose of ethnobotany. Bot. gazette, **21:**146-148.
5. Kavishankar, G. B., Lakshmidevi, N., Murthy, S. M., Prakash, H. S. and Niranjana, S. R. (2011). Diabetes and medicinal plants-A review. Int J. Pharm Biomed Sci, **2(3):**65-80.
6. Mali, R. G., Hundiwale, J. C., Gavit, R. S., Patil, D. A. and Patil, K. S. (2006). Herbal abortifacients used in North Maharashtra. Natural Product Radiance, **5(4):**315-318.
7. Malviya, N., Jain, S. and Malviya, S. (2010). Antidiabetic Potential of Medicinal Plants. Acta Poloniae Pharmaceutica-Drug Research, **67(2):**113-118.
8. Mitra, S. and Mukherjee, S. K. (2009). Some abortifacient plants used by the tribal people of West Bengal. Natural Product Radiance, **8(2):**167-171.
9. Murthy, P. P. and Venkaiah (2010). Some Abortifacient plants Used by the Tribal people of Andhra Pradesh, India. Journal of Phytology, **2(4):**07-12.
10. Phani, R. P. G. and AshokKumar, D. (2009). Ethno-Medico Botany of Medicinal plants for the Treatment of Diabetic Activity in Krishna District, Andhra Pradesh, IJPRD, vol. 8.
11. Robbins, W. W., Harrington, J. P. and Freire-Marreco, B. (1976). The Ethnobotany of the Tewa Indians. Bureau of America Ethnology Bulletin No. 55. Washington, DC. 1-124.
12. Shah, G. M., Khan, M. A., Ahmad, M., Zafar, M. and Khan, A. A. (2009). Observations on antifertility and abortifacient herbal drugs. African Journal of Biotechnology, **8(9):** 1959-1964.
13. Thirumalai, T., David, B. C., Sathiyaraj, K., Senthilkumar, B. and David, E. (2012). Ethnobotanical study of Anti-diabetic Medicinal plants used by the local people in Javadhu hills Tamilnadu, India. Asian Pacific Journal of Tropical biomedicine.
14. Ugemuge (1986). A flora of Nagpur district. Shree Publication Nagpur.
15. Lipp, F. J. (1989). Methods of Ethnopharmacological field work. J. Ethnopharmacol, **25:**139-150.
16. Schultes, R. E. (1962). The role of ethnobotanist in search for new medicinal plants, Llyodia. **25:**257-266.