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# ETHNOMEDICINAL USES OF SOME PLANT SPECIES BY TRIBAL HEALERS IN ADILABAD DISTRICT OF TELANGANA STATE, INDIA

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## ABSTRACT

An ethnobotanical survey was under taken to collect information from tribal healers on the use of medicinal plants in Adilabad district of Telangana State during 2007 – 2013.The indigenous knowledge of local tribal communities such as Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathura healers and the native plants used for medicinal purposes were collected through survey and personal interviews during field trips. The investigation revealed that, the traditional healers used 78 plant species belonging to 40 different families, to treat various diseases.This study showed that many people in the studied parts of Adilabad district still continue to depend on medicinal plants at least for the treatment of primary healthcare. Most medicinal plant species reported in this study were found to be under threat and this calls for urgent conservation measures so as to maximize the sustainable use of these vital resources in the study area. The traditional healers are dwindling in number and there is a grave danger of traditional knowledge disappearing soon since the younger generation is not interested to carry on this tradition.

**KEY WORDS:** - Ethno botanical, Tribal healers, Medicinal plants, Adilabad district, Telangana.

## INTRODUCTION

Ethno-botany is the study of association, interaction and interrelationship of primitive human society like aboriginals, tribals and girijan communities with surrounding plants [1], redefined it as the study of interaction of primitive man and plants [2]. Ethno-botany is a primitive art of healing and is an interdisciplinary plant science. The traditional health care practices of indigenous people pertaining to human health care are termed as-Ethno-medicine or Tribal Medicine. The knowledge of certain herbs, animals and minerals which have curative and palliative effects were transmitted from one generation to another. The Traditional medicinal methods are outcome of constant trial and error methods practiced by the tribals from generation to generation over hundreds of years. In India, it is reported that traditional healers use 2,500 plant species and 100 species of plants serve as regular sources of medicine. Plants have been used in traditional medicine for several thousand years. Traditional medicine is the mother of all the medicinal systems of the world such as Ayurveda. Importance of traditional system of medicine has now been recognized all over the world.

The World Health Organization [3] in the document on "Health for all" has indicated the role of traditional medicine in the Primary Health Care (PHC) of the people. WHO has recognized about 85% of the people in developing countries still rely on traditional medicine for their primary care requirements. During the last few decades there has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world. Documenting the indigenous knowledge through Ethno botanical studies is important for the conservation and utilization of biological resources. There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal plants for the treatment of various diseases. In the developed countries, 25 per cent of the medical drugs are based on plants and their derivatives.

Traditional medical knowledge of medicinal plants and their use by indigenous cultures are not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future. Apart from the tribal groups, many other forest dwellers and rural people also posses' unique knowledge about plants. The objective of this study was to interact with local traditional healers and document their knowledge on medicinal plants, their usage and the types of diseases treated etc. The present-day traditional healers are very old. Due to lack of interest among the younger generation as well as their tendency to migrate to cities for lucrative jobs, wealth of knowledge in this the

area is declining. So far nonsystematic Ethno botanical survey has been made in this area and this is the first report on the medicinal plants used by the local traditional healers.

**The study area**

Adilabad district is one of the 10 districts of Telangana and situated in the north western corner of the state. This District is situated between $77^{o}$.46' and $80^{o}$.01' of the eastern longitudes and $18^{o}$.40' and $19^{o}$.5' of northern latitudes. Forest occupies about 43.18 % of the total. The normal rainfall of the district is 1044 mm as against 634 mm of the state. In 1905 the status of this sub-district was raised to that of an independent district with head quarters at Adilabad. Adilabad is one of the most backward districts of T.S. It is known for its characteristic presence of Sahyadri hills (locally called as Satnala Range) in its northern boundary, richness of forests as well as rich hydrocarbon resources like coal mines. The district encompassed with most ancient and innocent Aadivasis. The rural folk are known for their famous carved wooden work, the most internationally known art of rural painting, small scale industry is well established in Nirmal town, popular as "Nirmal paintings". The district is also having a 'Tiger reserve' second of its kind in A.P at Kawal known as "Kawal Tiger Reserve" and bestowed with number of scenic waterfalls at various places of the district like "Kuntala waterfalls" and "Pochara water falls".The district is endowed with rich forest habitation, and Adilabad district is known to encompass huge deposits of Gondwana rocks both Upper Gondwana and Lower Gondwana deposits. The Lower Gondwana rocks possessed a rock preserved plant and animal fossils. This district is a hub for fossil dinosaur fauna and Gondwanic fossil plants.The North-Western forest is occupied by rich dry deciduous forest vegetation dominated by *Tectona grandis, Anogeissus latifolia, Terminalia arjuna* also contain the typical forest flora of Gondwani valley. During a preliminary survey for medicinal plants Koppula Hemadri Doyen ethnobotany of AP, was so much impressed and commented that "the district has a rich legacy of ethnic medicinal practices related to both human and veterinary healing practices" and he recorded some interesting procedures for various treatments practiced for human ailments [4]. The district is in the eastern part of the Telangana region. Kolams, Naikpods, Pardhans, Gonds, Chenchus, Thotis, and Mathuras are the major Scheduled tribes, out of the total population of the district. The available information shows that the tribes still largely depend on the traditional knowledge, as for majority of the people new technologies are not reachable.

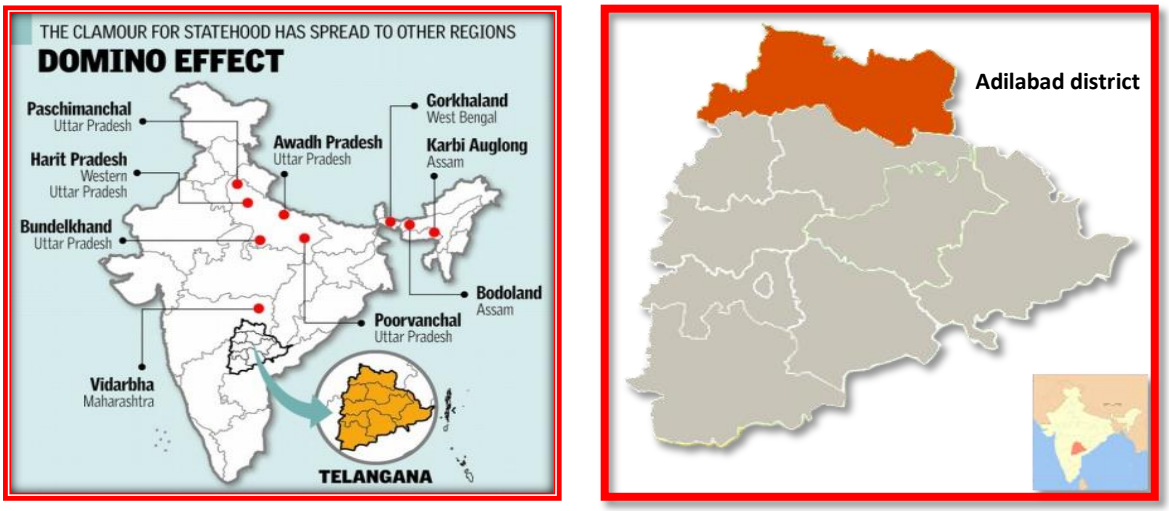


**Figure 1. Geographical map of Adilabad district, Telangana State and India.**

**Figure 2. Forest in different locations of Adilabad district**

## MATERIALS AND METHODS

The present study is aimed at the preparation of an inventory of plants and their medicinal uses practiced by tribal's in Adilabad district, related to the traditional medicinal practices of local tribal communities such as Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras to achieve this aim the following objectives were studied viz., 1) To record the traditional medicinal practices of the Tribal communities of Adilabad district. 2) Botanical identification and herbarium preparation of the plants used by them. 3) To record the methodology followed by them in diagnosis during administration and curing of the diseases. 4) To document the scientific data for future reference/studies. 5) To study the other non-medicinal uses of the plants such as food, fodder and other uses.

The data on medicinal plants was collected during July 2007 – 2013. Locally well known herbal healers and poojaris belonging to tribal communities of the district the abve said were

cntacted. The author has visited nearly 30 habitations belonging to Bellampalli, Chinnur, Ichoda, Jaipur, Jannaram, Kerimeri, Sirupur (u), Tiryani, Utnoor and Wankidi Mandals. The author has also visited villages and habitations like Gondu gudems, Naikapu gudems. The area under investigation was searched for ethno medicinal plants carefully in the trible community habitations of the district. The field survey was carried out covering different seasons over a period of one year in 10 Mandals of Adilabad district. As first step we conducted four days workshop with local educated youth and tribal list elders to understand their local medicinal system on human health. The workshop aimed to discuss health care management. Author has taken help of local well known healers for identification of human diseases based on the symptoms recorded in the field notes. Healers' bio-data was also recorded and prepared a directory of the healers of the study area, which could then be used for future reference. Standard methods of botanical collection and techniques of herbarium preparations were followed as suggested [5,6]. Plants have been collected in flowering and fruiting stages for the preparation of herbarium. Herbarium specimens were identified and accessed as per the norms laid down.

The vouched specimens were deposited in the Herbarium, Department of Botany, Osmania University and Hyderabad. Observations of the plant species were made with respect to their location and other field characters [7]. The plant specimens were identified using district, regional and state floras like Flora of Adilabad District[8], Flora of the Presidency of Madras[9], and important medicinal plants of Adilabad district of Andhra Pradesh [10,11].The traditional healers who were practicing traditional medicine were interviewed from time to time to record the first- hand information. Information was gathered regarding plants or their parts, preparation of the medicine, dosages, method of administration and described recipe for human and veterinary use were also recorded.

**Local traditional healers**

Local traditional healers having practical knowledge of plants in medicine were interviewed in 30 villages of the district during 2007 – 2013. Methods of selecting informants depended upon the distribution of local people having folk knowledge. They were requested to collect specimens of the plants they knew or to show the plant species on site. These informants were traditional healers themselves or had tradition of healing in their families and had knowledge of the medicinal use of the plants. Fuel wood from the surroundings was the main energy source for cooking and eating. The wealth of medicinal plant knowledge among the

people of this district is based on hundreds of years of beliefs and observations. This knowledge has been transmitted orally from generation to generation; however it seems that it is vanishing from the modern society since younger people are not interested to carry on this tradition.

**The structure of tribal medicinal system**

Tribal medicine is practiced since centuries by the aboriginal community world. Tribal medicine differs from modern medicine. It is practiced in multi heeling methods of treatment of drug and is based on belief and taboos. The primitive man learnt this art of healing; the knowledge is passed on from generation to generation through oral tradition. Knowledge of tribal medicine is incorporated in all the traditional systems of medicine such as Ayurveda, Siddha, Unani, Homeopathy, Tibetan and Chinese medicine. The tribal medicine is based totally on secrecy and belief.

The classification of tribal drug treatment can be roughly done as shown in the figure 3. Tribal doctor believes that diseases can be cured through magic and religious ceremonies. The Gonds worship the nature god such as Perasa pain, Ali pain, and Avil pain. Avilet the tribal doctor is also called as 'Deavali' by the tribes.

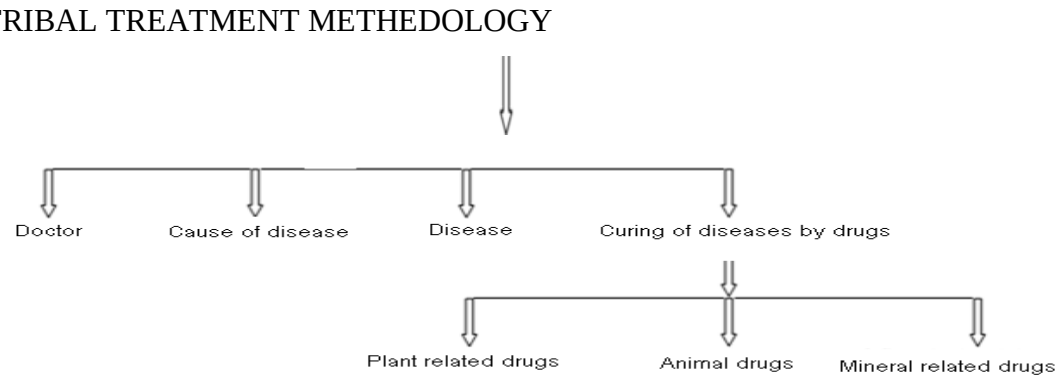


**Figure 3:-. Classificatin of tribal drug treatment**

**Tribal treatment methods of Adilabad district**

The tribal people living in the forests and hills have learned the herbal medicinal knowledge from their ancestral people so that they do not suffer when they fall sick. They can identify all the herbs which can be used to prevent the diseases. In the tribal community, person who cures diseases using herbs are locally known as Vaiddugudu, Vadde, Gunya, Pujari and Gurava. Tribal medicinal practices include psychological treatment of the patients by using 'Manthrams' and other religious performances like pujas, theerthams and thayettu. Roots,

leaves or whole plants are used in treatment. There are lots of herbs in Adilabad forests which can be used to prevent many diseases, the important herbs used by the tribal people.

**Preservation of plant specimens**

Standard method was followed with regard to collection of plant materials, drying, mounting, preparation and preservation of plant specimens. Voucher specimens of medicinal plants in triplicates were collected, prepared and identified. Plants with their correct nomenclature were arranged alphabetically by family name, vernacular name and ethno medicinal uses. The identification and nomenclature of the listed plants were based on The Flora of Presidency of Madras.

**ENUMERATIONS**

In the enumeration, the taxon is arranged alphabetically. The name of species is followed by, family name, local name, disease and medicinal uses.

**Table 1:- Ethno botanical uses of some medicinal plants used by tribes.**

| S. No | Botanical name / Family | Part used | Preparation/Administration | Ailment |
|---|---|---|---|---|
| 1. | *Adhatoda vasica* Nees (Acanthaceae) | Leaves | Leaves are ground with the flowers of *Hibiscus rosa-sinensis* and taken orally for the treatment of asthma. | Asthma |
| | | | 100ml leaf decoction along with honey is given internally morning and evening to get relief from cough. | Cough |
| 2. | *Andrographis paniculata* (Burm) Wallich ex Nees (Acanthaceae) | Leaves | Leaf paste is applied topically at the bitten site of snake, beetle and scorpion. Powdered leaf is mixed with cow or goat's milk and taken orally to treat diabetes. | Diabetes |
| 3. | *Justicia gendaruss* Burm (Acanthaceae) | Leaves | Leaf paste is applied over the affected area. | White patches |
| | | | Leaf powder is mixed with coconut oil and applied topically to heal wounds (burns). | Wounds (burns) |
| 4. | *Trianthema portulacastrum* L. (Aizoaceae) | Leaves | 3 – 4drops leaf juice is dropped into the nostrils to relieve partial headache. | Partial headache |
| | | Root | Decoction of roots is taken internally to treat constipation and asthma | Asthma |
| 5. | *Achyranthes aspera* L (Amaranthaceae) | Root | Roots are used as a brush for strong and healthy teeth. | Tooth problem |
| | | Leaves | Leaf paste is applied on hands for protection from scorpion sting. Scorpion cannot bite if we apply the juice. | Scorpion sting |
| | | | Leaf paste is applied topically to treat cuts and wounds. | Wounds |

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| 6. | *Aerva lanata* (L.) Juss.Ex Schult. (Amaranthaceae) | Leaves | 10ml leaf juice is taken orally twice in a day for 3 days. | Cough and cold |
| | | Whole plant | Juice of whole plant is taken orally to treat cough, sore throat and wounds. | Sore throat and wounds. |
| 7. | *Odina wodier* Roxb. Fl. (Anacardiaceae) | Leaves | Juice of leaves is taken orally to prevent white discharge in women. | White discharge |
| 8. | *Polyalthia longifolia* (Sonn.) Thwaites. (Annonaceae) | Stem | Juice extracted from the fresh stem bark is taken orally to treat indigestion. | Indigestion |
| 9. | *Catharanthus roseus* G. (Apocynaceae) | Whole plant | Whole plant is powdered and mixed with goat or cow's milk and taken orally to treat diabetes. | Diabetes |
| 10. | *Nerium oleander* Sol. ( Apocynaceae) | Stem | Juice prepared from the stem bark is boiled with gingely oil and two drops are poured into ear to treat ear pain. | Ear pain |
| 11. | *Rauvolfia Serpentina* Linn. Benth. Ex Kurz (Apocynaceae) | Apical buds | Apical bud is ground to paste and applied on aching tooth. | Tooth problems |
| | | Latex | Latex is applied directly on wounds. | Wounds |
| | | Whole plant | Paste of the whole plant is mixed with castor oil and applied topically to treat skin diseases | Skin diseases |
| 12. | *Wrightia tinctoria* (Roxb.) R.Br. ( Apocynaceae) | seeds | Juice of seeds taken orally to treat indigestion. | Indigestion |
| | | Leaves | Young leaves are chewed and kept under the aching teeth, 1-2 drops of sweet oil is put into the opposite ear for tooth ache. | Tooth problems |
| | | Stem | 50ml stem bark juice and small quantity of inguva mix is given orally before breakfast during active menstrual period, for three days. | Infertility |
| 13. | *Acorus calamus* L. (Araceae) | Root | Dried rhizome is ground in water and the paste is given orally to children for clarity of speech. | Clarity of speech |
| 14. | *Gymnema sylvestre* R.Br.(Asclepiadaceae) | Leaves | Leaf powder is mixed with cow's milk and taken orally to treat diabetes. The root powder is taken orally and also applied on the bitten spot to treat snake bite. | Bitten spot to treat snake bite |
| | | Root | The root paste is applied on scorpion sting. | Scorpio sting |
| 15. | *Wattakaka volubilis* Cooke. (Asclepiadaceae) | Leaves | Leaf paste is applied topically to treat rheumatic pain, cough, fever and severe cold. | Cold |
| | | | Young leaves are chewed and kept under the aching teeth, 1-2 drops of sweet oil is put into the opposite ear for tooth ache. | Tooth problems |
| 16. | *Eclipta prostrata* L. (Asteraceae) | Leaves | Leaf powder is mixed with coconut oil and applied on the hair regularly for healthy and black hair. | Black hair |
| | | Whole plant | Whole plant and 10black pepper are ground together and made into small pills about 1g size and administered thrice in a day for 5 days. | Fever |
| 17 | *Sphaeranthus indicus* L. (Asteraceae) | Leaves | Leaf, flower and seeds are ground into paste and applied topically to treat skin diseases and piles. | Piles |
| 18 | *Tridax procumbens* L. (Asteraceae) | Leaves | Leaf paste is applied topically on cuts and wounds. | Wounds |
| | | Petioles | 5g petioles of *Butea monosperma* are ground and mixed with 10 ml leaf juice of *Tridax procumbens*, 4 – 5 drops of the liquid extract is put in the | Tooth problems |

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| | | | opposite ear for tooth ache. | |
| 19. | *Coldenia procumbens* L. (Boraginaceae) | Leaves | Juice of leaf is taken orally to prevent white discharge in women. | White discharge |
| 20. | *Heliotropium indicum* L. (Boraginaceae) | Whole plant | Paste of whole plant is applied topically to treat wounds and skin inffections. | Skin inffections |
| 21. | *Cassia absus* L. (Caesalpiniaceae) | Seeds | Seeds are ground into paste and applied topically to treat skin diseases and headache. | Headache |
| 22. | *Cassia auriculata* L. (Caesalpiniaceae) | Flowers | Flowers are crushed and mixed with goat's milk and taken orally to prevent white discharge in women. | White discharge |
| | | Seed | 5 to 7gm seed powder mixed with honey is given orally. | Diabetes |
| 23. | *Cassia occidentalis* L. (Caesalpiniaceae) | Leaves | Leaf paste is applied topically to treat scabies and to heal bone fractures. | Bone fractures |
| | | | 10 to 15ml leaf juice is given orally to cure boils. | Boils |
| 24. | *Tamarindus indica* L. (Caesalpiniaceae) | Fruits | Dried fruits are taken orally to treat eye infections. | Eye infections |
| | | Leaves | The leaves are heated and tied over the affected area. | Swelling |
| 25. | *Capparis zeylanica* L. (Capparaceae) | Root | Root bark is ground with water, boiled and taken orally to treat indigestion. | Indigestion |
| | | Stem | 50ml of stem Bark juice, with sugar is given orally before breakfast, generally on menses period. | Infertility |
| | | | 30ml stem bark juice with sugar is taken orally before breakfast, generally on menses period. | Menstrual Complaints |
| 26. | *Cleome viscosa* L. (Capparaceae) | Leaves | Leaf paste is applied topically to heal wounds. | Heal wounds |
| | | | 2-3drops of leaf extract is put in the ear opposite to the pained. | Ear disease |
| 27. | *Terminalia arjuna* Roxb.Ex. Dc Wight & Arn.( Combretaceae) | Fruits | Fruit paste is applied topically on wounds. | Wounds. |
| | | Bark powder | Bark powder is boiled with water and inhaled to cure headache and to kill worms in teeth. | Kill worms in teeth |
| | | Roots | Roots are collected in the early morning and tied to the waist to cure intermittent fever. | Fever |
| 28. | *Merremia emarginata* (Burm.f.) Hall.f. (Convolvulaceae) | Whole plant | Decoction of the whole plant is taken internally to treat stomach problems. | Stomach problems |
| | | Leaves | Leaf juice is extracted and given orally twice in a day for three days. | Blisters |
| 29. | *Coccinia grandis* (L.) J. Voigt. (Cucurbitaceae) | Whole plant | 20ml whole plant extract is given orally to treat diabetes. | Diabetes |
| | | Leaves | The leaf juice is mixed with salt and breast milk is given in the case of eye diseases. | Eye diseases |
| | | | Leaf paste is applied over cut wounds. | Wounds |
| | | | Leaves are ground to make paste and are applied over boils until cure. | Boils |
| 30. | *Mukia maderaspatana* (L.) M. Roemer (Cucurbitaceae) | Leaves | Leaf powder is mixed with boiled rice and taken orally to treat cold and cough | Cold and Cough |
| | | Roots | Roots are masticated to cure tooth ache | |
| 31. | *Cyperus rotundus* L. ( Cyperaceae) | Tuber | Paste of dried tuber is applied on breast of women to secrete more milk and applied topically on | Scorpion bitten |

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| | | | bitten site of scorpion. | |
| 32. | *Acalypha indica L.* (Euphorbiaceae) | Leaves | Leaves with a little salt and a pinch of turmeric are ground to powder and mixed with sesame oil and applied on the patches areas. | Skin diseases |
| 33. | *Euphorbia antiquorum* Linn (Euphorbiaceae) | Dried latex | Dried latex is taken internally in low dose to help free motion. | Free motion |
| 34. | *Euphorbia hirta* L. (Euphorbiaceae) | Milky latex | The milky latex is applied topically to treat wounds and lip cracks. | Lip cracks |
| | | Latex | Latex is applied externally on heal cracks and burns until cure. | Heal cracks and Burn |
| 35. | *Euphorbia tirucalli* L. (Euphorbiaceae) | Stem | The stem is boiled with water and given to children to treat skin diseases. | Skindiseases |
| | | Latex | The latex applied on the aching tooth. | Tooth problems |
| | | Leaves | 20gm fresh leaves are ground to paste and mixed with a cup of cow or goat's milk and given internally to cure jaundice. | Jaundice |
| | | Whole plant | Take whole plant powder and mishri in equal quantities and a half spoon of it are given orally once or twice in a day till some improvement are observed. | Urinary infections |
| 36. | *Phyllanthus emblica* L. (Euphorbiaceae) | Fruit | Fruit powder is mixed with cow's or goat's milk and taken orally to treat cold and cough. | Cold and Cough |
| 37. | *Ricinus communis* L. (Euphorbiaceae) | Leaves | The leaf juice is taken orally or washed leaves are tied on the breast to increase secretion of milk in women. | Increase of milk |
| 38. | *Abrus precatorius* Linn. (Fabaceae) | Leaves | Grind handful of leaves to make juice; 20ml of this juice is given internally twice a day for 3 days. | White discharge |
| | | Root | 5g of fresh roots are chewed once in the early morning and evening for a week to removal of kidney stones. | Bladder stones |
| | | Seed | 10g of seed pulp is pounded along with 50g jaggery and 50g seeds of red gram to make 1gm size of pills, 1pill are given internally for three days starting from fourth day of menstruation. | Infertility |
| 39. | *Clitoria ternatea* L. (Fabaceae) | Root | Root powder is mixed with water and taken orally to treat indigestion, eye diseases and headache. | Headache and indigestion |
| 40. | *Pongamia pinnata* (L.) Pierre. (Fabaceae) | Root | 50ml Juice of root is mixed with equal amount of coconut milk boiled and applied topically to cure wound and gastric trouble. | Gastric trouble |
| 41. | *Coleus aromaticus* Benth. ( Lamiaceae ) | Leaves | Leaf juice is taken orally by children to treat indigestion and cough. | Cough |
| 42. | *Leucas aspera* (Willd.) Link ( Lamiaceae) | Leaves | A bunch of leaves is boiled and the vapour is inhaled to cure headache and fever. | Headache and fever |
| | | | A bunch of leaves are boiled in water and the vapor is inhaled to cure head ache and fever. | |
| 43. | *Ocimum sanctum* L. ( Lamiaceae) | Leaves | Leaves are crushed with onion bulbs and the juice is taken orally to treat cough, cold and headache. | Cold, cough and headache |
| | | | 2 to 3 drops of leaf juice is dropped in ears. | Ear diseases |

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| 44. | *Cinnamomum verum* Presl. (Lauraceae) | Stem | Decoction of stem bark is taken internally to treat cough, dysentery and to keep the body cool. | Body cool |
| 45. | *Aloe vera* L. (Liliaceae) | Stem | Sap mixed with oil is heated and the mixture is applied on hair for hair growth and good sleep. | Hair growth and good sleep |
| 46. | *Sanservieria roxburghiana* Schult (Liliaceae) | Stem | Juice of warmed leaf is poured into ear to treat ear pain. | Ear pain |
| 47. | *Lawsonia inermis* L. (Lythraceae) | Leaves | Leaf powder is mixed with coconut oil and applied topically to treatment of cuts and wounds. | Cuts and wounds |
| 48. | *Abutilon indicum* L. (Malvaceae) | Leaves | Leaf juice and root are taken orally to treat dental problems. | Dental problems |
| | | Stem | 10g stem bark extract of *Dichrostachys cinerea* and *Abutilon indicum* in water is given orally once in a day for a week. | Paralysis |
| 49. | *Hibiscus rosa-sinensis* L. (Malvaceae) | Leaves | Paste of fresh leaves is applied on the hair for healthy and black hair. | Healthy and black hair |
| 50. | *Sida acuta* Burn. (Malvaceae) | Leaves | Leaf paste is applied topically to heal cuts, wounds and to get relief from headache. | Headache |
| 51. | *Azadirachta indica* A. Juss. (Meliaceae) | Leaves | Leaf paste is applied topically on the body to treat small pox, rheumatism and skin diseases. The young twigs are used as toothbrush to develop strong teeth. | Small pox |
| | | | Take 100g dry leaf powder of *Azadirachta indica* and *Vitex negundo* each, mix in 500 to 800ml water, and feed twice in a day for 4 days or Extract juice from 200g leaves of *Azadirachta indica* mix with 700 ml of water or buttermilk drench twice in a day for 4 days. | Diarrhoea |
| 52. | *Tinospora cordifolia* Miers. (Menispermaceae) | Leaves | Leaf paste is applied topically to treat wounds. | Wounds |
| | | | 100ml leaf decoction is given internally. | Diabetes |
| | | Fruit | 5gm of dried fruit powder mixed with honey is given orally | Jaundice |
| 53. | *Mimosa pudica* L. (Mimosaceae) | Leaves | Pinch of leaf paste is applied topically to treat cuts and wounds. | Wounds and Snake bite |
| | | | Leaf paste is applied over snake bite. | |
| 54. | *Ficus benghalensis* L. (Moraceae) | Latex | Latex is applied topically on heel cracks. Young stem is used as tooth brush. | Heel cracks |
| | | Leaves | Leaves of are fried and powdered, mixed with cow ghee and applied on the head once in a day for 15days. | Hair growth |
| | | Root | Make a decoction with tender prop roots and 5 to 6 spoonfuls of it is given twice a day for 4 months. | Piles |
| 55. | *Ficus racemosa* L (Moraceae) | Stem | The stem bark paste is applied over the injury of snake bite. | Snake bite |
| | | | Take 100g dried stem bark powder add a spoonful of zeera powder, 100g of mishri powder, mix well and a tea spoon of it is consumed twice in a day before meals. (Avoidences: chicken, egg etc. | Red discharge |

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| 56. | *Ficus religiosa* L (Moraceae) | Leaves | Dried leaf powder is mixed with water and taken orally to get relief from body pain. | Body pain |
| | | | Decoction of stem bark is applied on wounds to stop bleeding from wounds. | |
| 57. | *Syzygium cumini* (L.) Skeels (Myrtaceae) | Stem | Paste of stem bark is applied topically to treat swellings. The ripe fresh fruits are taken orally to reduce body heat. | Body heat |
| | | Friut | The ripe fresh fruits are taken orally to reduce body heat. | Body cooling |
| 58. | *Boerhaavia diffusa* L. (Nyctaginaceae) | Root | Root paste is applied topically to treat Hydrocele. | Hydrocele |
| 59. | *Cynodon dactylon* L. Pers. (Poaceae) | Whole plant | 50ml whole plant decoction is taken orally to keep the body cool. | Body cooling |
| | | | The whole plant is crushed to make juice; 10ml of this juice is given along with honey once in a day for 5-6 days. | Diarrhoea |
| 60. | *Zizyphusmauritiana* Lam (Rhamnaceae) | Leaves | Leaf and bark decoction is boiled and it is used to take bath to treat severe body pain. Dried bark powder is applied topically to treat wounds. | Wounds |
| 61. | *Morinda tinctoria* Roxb. (Rubiaceae) | Leaves | Leaf juice is given orally to children before food for easy digestion. | Easy digestion |
| 62. | *Spermacoce hispida* L (Rubiaceae) | Seed | The seeds are crushed into paste and taken orally to treat stomach problems. | Stomach problems |
| 63. | *Aegle marmelos* Corr.ex.Roxb (Rutaceae) | Fruit | 10g fruit pulp is given with water to children who are suffering with Diarrhoea. | Diarrhoea |
| | | Leaves | Leaf paste is applied over the wounds once in a day until cured. | Wounds |
| 64. | *Citrus aurantifolia* (Christm.) Swingle. L. (Rutaceae) | Leaves | Decoction of leaves is inhaled to get relief from fever, headache and cold. | Headache and Cold |
| 65. | *Murraya koenigii (*L.) Sprengel (Rutaceae) | Leaves | Juice of tender leaves is taken orally to arrest vomiting | Vomiting |
| | | | Leaves are chewed to cure diarrhoea. | Diarrhoea |
| | | | The leaves are applied externally to cure eruption. | Eruption |
| 66. | *Cardiospermum halicacabum* L. (Sapindaceae) | Root | Root is boiled with oil and applied on head before bath to treat throat infection and headache. | Throat infection |
| 67. | *Datura metel* L. (Solanaceae) | Leaves | Leaf juice is applied over the affected areas of ring worm. | Ring worm |
| | | | Leaves are fried in oil and applied on the inflammated area. | Inflammation |
| | | Whole plant | Whole plant parts are taken as food to treat cough. | Cough |
| 68. | *Solanum torvum* Sw. (Solanaceae) | Leaves | Leaf juice is taken orally to reduce body heat. | Body heat |
| | | Root | The root stock is chewed and used as tooth brush for healthy teeth. | Tooth problems |
| 69. | *Solanum nigrum* L. *(Solanaceae)* | Fruit | Unripe fruits are prepared as curry or roasted in gingely oil and taken orally along with food to | Strengthen the body |

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| | | | strengthen the body. The leaf juice is taken orally to treat cough and itching. | |
| | | Whole plant | Whole plant parts are taken as food to treat cough. | Cough and cold |
| | | Leaves | Take half cup leaf juice, add sugar and jeera mixed with water and given orally. | Epilepsy |
| 70. | *Melochia corchorifolia* L. (Sterculiaceae) | Leaves | Boiled leaf is taken as food to help in free motion. | Free motion |
| 71. | *Clerodendrum inerme* (L.) Gaertn (Verbenaceae) | Leaves | Extract leaf juices; add mishri and jeera powder and the same are given orally as a drink on Sunday, Tuesday and Fridays. (Diet: only curd rice on that day). | Fever |
| 72. | *Lantana camara* L. (Verbenaceae) | Flower | A handful of flower is ground with coconut oil and applied topically on the head to get relief from headache. | Headache |
| | | Leaves | Leaves are ground to paste adding a pinch of salt and turmeric, the paste is applied on wounds. | Wound |
| 73. | *Lippia nodiflora* Mich. (Verbenaceae) | Leaves | Paste of leaves is applied topically to treat swellings and wounds. | Swellings and Wounds |
| | | Whole plant | 50ml whole plant juice is administered orally. | Stomach ache |
| 74. | *Stachytarpheta jamaicensis* Vahl. (Verbenaceae) | Stem and root | Paste of stem and root bark is applied topically to treat dysentery. | Dysentery |
| 75. | *Vitex negundo* L. (Verbenaceae) | Leaves | Take 100g dry leaf powder of *Azaderachta indica* and *Vitex negundo* each, mix in 500 to 800ml water, and feed twice in a day for 4 days or extract juice from 200g leaves of *Azaderachta indica* mix with 700ml of water or buttermilk drench twice in a day for 4 days. | Diarrhoea |
| | | | Water boiled with young leaves is given for bathing to the women suffering from post delivery pains. | Post delivery pains |
| | | Stem | Shoot buds of *Vitex negundo* and *Calotropis gigantea* crushed to juice, mixed with rasa karpurum, 2 – 3 drops of the liquid extract is instilled in the opposite ear of paining for tooth ache. | Tooth problems |
| 76. | *Hybanthus enneaspermus* F. Muell (Violaceae) | Root | Root bark of *Hybanthus suffruticosus and the* leaves of *Withania somnifera* are grinded together to make small pills with the size of 5g each. One pill is given orally with goat milk once in a day for 3-4 days. | Backache |
| | | Stem | Stem and leaves of *Hybanthus suffruticosus* are ground with dommadole gadda and small globules are made and given orally with goat milk. | Joint pain |
| 77. | *Cissus quadrangularis* L.( Vitaceae) | Stem and leaves | Stem bark paste is given orally. | Indigestion |
| | | | The paste of fresh stem and leaves is applied externally to cure ringworm infections. | Ring warm |

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| 78. | *Tribulus terrestris* L. (Zygophyllaceae) | Fruit | The fruit and root are mixed with boiled raw rice, taken orally to prevent white discharge in women and to treat urinary troubles. | White discharge and Urinary troubles |
| | | Leaves | 30ml of Leaf extract is given orally once in a day for the removal of bladder stones. | Bladder stones |

## RESULTS AND DISCUSSION

The present paper is the detailed information on 78 plant species belonging to 40 different families used as herbal remedies in primary health care by the trible healers of Adilabad district, Teleangana India. The data indicate that there is still valid and active knowledge of the therapeutic uses of wild plant species growing in the region. The plants used are found growing spontaneously and available in the vicinity and in many cases are the immediately available therapeutic resources. Most of the herbal remedies comprise one or, few with two and rarely three or more in a preparation thus providing ample opportunites to study their active principles in relation to the ailments concerned. The herbal remedies mentioned are against post-delivery infections, lumbago, abortion, white and red discharges in women, body pains and swelling, tooth and gum infections, muscle catch and sprains, bone fractures, fevers, stomach ache, eye infections and cataract, snake bite and scorpion sting, cough and asthma, ear aches, head ache and migraine, boils and abscesses, dysentery, rheumatic pains, liver disorders, diabetes, piles, as aphrodisiac, for improvement of general strength and sexual vigour, etc.

Herbal remedies provide essential health care, which the village people of this region utilize to immense benefit. Although these remedies do not find esteem compared to modern medicine, their efficacy is claimed to be high. An indepth study, mainly experimental with clinical efficacy of these drug preparations is essential in man cases.

It is interesting to note that the same plant materials are used as a medicine for various human ailments differently by different Tribal Communities, for example, *Andrographis paniculata* (Burm.f.) Nees is used to cure fever, abdominal pain and diabetes by Kolams; while Gonds use it for stomach ache. Like-wise different parts of the same plant (root, stem, leaf, fruit, flower, seed etc) are used differently to cure different ailments by different tribal communities. Mahua plant (*Madhuca indica* Gmel) is a huge tree in tropical India and it is also widely distributed in the entire district. Ethnic people treat this plant as “Kalpavrukshamu” and also considered as sacred. Thus they never cut the plant. Mahua

plant provides food and medicine for local tribal people apart from its use of flowers for distillation of arrack. These trees are normally found near human habitation and cultivated fields also as fencing. The seed kernels are collected for extraction of oil for edible and commercial purposes. The district is proud of having a reputed national park known as the "Kawal Wildlife Sanctuary" (Now Called as Kawal Tiger Reserve) Kawal Wildlife Sanctuary is the largest Sanctuary in Adilabad district; it covers about 893 sq. kms, area. Kawal Wildlife sanctuary was declared a Wildlife Sanctuary in 1965 and in the June 2011 Government of India, Ministry of Forest declared "Kawal as Tiger Reserve Centre" to conserve the tigers population which exist in the area. This is the second tiger reserve forest in the area and the major wildlife species are Tiger, Panther, Gaur, Cheetal, Sambar Nilgai, Barking deer, Chowsingha, Mouse, Deer, Sloth bear and a variety of birds like Partridge, Quails, Peacocks, Eagles, Kites, Owls, Mynahs and Kingfishers etc. and the reptiles are Python, Cobra, Krait, Star tortoise Monitor Lizard, etc., The major plant species like *Tectona grandis* and it associates with *Anogeissus latifolia, Madhuca indica*, *Boswellia serrata, Strychnos nux-vomica, Diospyros melanoxylon* and *Bambusa* sp.

Under non-medicinal uses the tribal communities require "fodder plants" to feed their cattle. Tribal communites are completely dependent on wild fodder species to feed their domestic animals. Tree species are mostly lopped to feed their cattle and goats. The species which are lopped for green leaves as fodder in the summer are *Acacia catechu, Acacia nilotica, Albizzia lebbeck, Butea monosperma, Ficus tinctoria, Azadirachta indica, Ficus virens, Holoptelea integrifolia* and *Mangifera indica.* During rainy and winter season species like *Bambusa arundinacea, Bauhinia recemosa, Cassia fistula, Gmelina arborea* and *Moringa concanensis* are used as fodder. Climber species like *Coccinia grandis, Pueraria tuberosa* and shrub species like *Ixora pavetta, Solanum xanthocarpum* are used in winter and rainy season as fodder. Herbs and grasses like *Achyranthes aspera, Asparagus recemosus,Boerhaavia diffusa, Cassia occidentalis, Cocculus hirsutus, Dioscorea oppositifolia, Eclipta prostrata, Ipomoea carnea, Trianthema portulacastrum* and grass species of *Cynodon dactylon* were found to be used for their animals.

The tribals utilize number of plants in rituals, festivals and other ceremonies. They consider certain species as sacred or pious. Women of tribal and rural areas utilize seasonally available wild plant flowers and use them in the preparation of "Bathukamma" which is a famous community festival celebrated all over Telangana region. Flowers of *Cassia auriculata,*

*Celosia argentea, Polycarpea corymbosa, Cucurbita maxima, Mollugo pentaphylla, Plucaria wightiana* and *Tagetus petula* are commonly used to make colorful bathukamma.

## CONCLUSION

The present study indicates that the primary health care of the inhabitants is taking care of local tribal communities. Healers never charge any fee for treatment however; they ask farmers to bring additives like pepper, chilies, curcuma powder, Jaggery etc. while preparing medicine. Valuable herbal practices which are being practiced by tribal communities of Telangana State have to be studied scientifically and it is important to document and publicize the ethno medicinal plant knowledge among the young generations to raise awareness of and appreciation for traditional values. It also helps to conserve the sustainable use of the plants as well as to keep the traditional medical knowledge. The tribes living in and around the forest area are very much dependent on herbal practices due to lack of communication and cost of allopathy. The present day traditional healers are very old. Due to lack of interest among the younger generation as well as their tendency to migrate to cities for lucrative jobs, there is a possibility of losing this wealth of knowledge in the near future. It thus becomes necessary to acquire and preserve this traditional system of medicine by proper documentation and identification of specimens.

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