RESULTS AND DISCUSSION

Over the centuries, Indian herbal drugs have served as a major source of medicines for the prevention and treatment of diseases. Ethnobotany studies the complex relationships between plants and cultures. It is multidisciplinary science defined as the interaction between plants and people. The relationship between plants and human cultures is not limited to the use of plants for food, clothing and shelter but also includes their use for religious ceremonies, ornamentation and health care. The knowledge applied in traditional medicine has strong practical component. Since it is often developed in part as an intellectual response to the necessities of life, its findings can be of direct and indirect benefit to the society at large. Numerous traditional medicine practices have been usefully applied in treating various diseases in some localities but seeking to make others benefit from this knowledge especially with industrial and commercial advantages usually meets with concerns about possible misappropriation of its use and much more the fact that the role and contribution of the holders of this knowledge will not be recognized and respected. One of the challenges posed by the modern age is finding ways of strengthening and nurturing the roots of traditional medicine so that its fruits can be enjoyed by future generations (Kunle, 2009). The traditional healers are of varied communities and sharing their knowledge and using it for different ailments occurred in Bhor region.

VI-1: Informants from Bhor region.

Bhor region is populated with all types of communities like Maratha, Kumbai, Mahadeokoli, Barbers, etc. Most of the communities depend on agriculture as a main occupation. Present survey carried out in 105 informants from different 80 villages. These informants vary in age groups. Two old persons were of the age group between 90 to 95, maximum people belong to age group of 51-60 followed by 61-70, 41-50 and 31-40 four persons and young one is only educated person namely Anand Tukaram Bandal who is matriculate.
Table VI-1: Age wise classification of informants

<table>
<thead>
<tr>
<th>Age group of the informants</th>
<th>No. of informants</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30</td>
<td>1</td>
</tr>
<tr>
<td>31-40</td>
<td>4</td>
</tr>
<tr>
<td>41-50</td>
<td>27</td>
</tr>
<tr>
<td>51-60</td>
<td>37</td>
</tr>
<tr>
<td>61-70</td>
<td>27</td>
</tr>
<tr>
<td>71-80</td>
<td>6</td>
</tr>
<tr>
<td>81-90</td>
<td>1</td>
</tr>
<tr>
<td>91-100</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>105</strong></td>
</tr>
</tbody>
</table>

Composition of literate and illiterate informants are as follows

Table VI-2: Education wise classification of informants

<table>
<thead>
<tr>
<th>Educational status</th>
<th>No of informants</th>
<th>% Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>25</td>
<td>23.81</td>
</tr>
<tr>
<td>1-4 std.</td>
<td>40</td>
<td>38.10</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; – 7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>30</td>
<td>28.57</td>
</tr>
<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt; -10 th</td>
<td>10</td>
<td>9.52</td>
</tr>
<tr>
<td>11-Graduate</td>
<td>Nil.</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>105</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Out of 105 informants 40 were educated up to 4<sup>th</sup> standard (38.10%), 30 upto 5<sup>th</sup> to 7<sup>th</sup> standard (28.57%) and 10 were educated upto the 10<sup>th</sup> standard (9.52%). Illiterate people were 25 who were not going to the school. This indicates that illiterate people have more information on plant resources due to long association with nature for livelihood. Korma (1995) has reported that rural children do not remain in their communities long enough to acquire the knowledge available to them through tradition. They are in school for the better part of the day, while in
some cases they have to leave their villages and go to the towns where the schools are located. As a result, this traditional knowledge is lost to succeeding generations of school educated young people. Secondary and higher secondary education is not available in tribal areas they have to shift to town or taluka places. Bhor is hilly region and education at primary level is upto 4th standard and conducted by only one teacher. Few of them may take higher education up to the 7th standard. Those who are financially better they may take higher secondary and higher education (Kamble and Kulkarni, 2010).

Total 99 male and 6 female informants were giving information on medicinal plants used for human and animal diseases. It was observed that in each village or in a group of 4-5 villages, one woman is specialized in delivery of women and she knows all types of herbal medicines which were useful during the accouchement. Locally known as Dai or traditional birth attendant. One veterinary healer is known for his specialized field of bone setting, diarrhoea, wound healing, anthrax, etc. One shepherd is giving medicines to goat and sheep. Tribal healers, agriculture farmers and laborers were also giving information on many ailments. Vaidus or Bhagats are specialized persons in the area and they handled uncommon cases which are not cured by physician like Jaundice, diabetes, chronic diarrhea and dysentery, anemic conditions, etc. Traditional cultures also differentiate between supernatural and natural causes of diseases. So ethnic medicines are also involved in magical rituals. In order to safeguard animals or humans against ghosts, witches and evil spirits, amulets and charms are tied. But when the ailment is identified as being infectious, preventive measures to avoid contact with the diseased human / animals or the affected areas are undertaken. (Ilse, 1997). These local barefoot doctors or vaidus have integration with culture, religion and other aspects of a community’s life; animal healers often also treat humans and human healers treat animals. Their main approach is holistic i.e. to treat whole patient and to depend mostly on observations and the senses (Hafeel and Shankar, 1999).

Herbarium is a main objective of present ethno-medico-botanical work. Total 134 herbarium sheets were prepared and deposited at AHMA (Agharkar Herbarium of Maharashtra Association) recognized by Kew herbarium. Ethno-medico-botanical data is incorporated in each herbarium, it includes botanical name, family, local name, locality, part used, ethno-medico-botanical notes and utility for ailments either human or cattle diseases.
VI-2 : Human diseases

The present work has described total 231 plant species used for 22 ailments in human diseases and 16 animal diseases. Out of 231 species, 204 species from 179 genera and 89 families are reported to be useful in human diseases. In this taxonomical diversity, two Pteridophytic species from two genera belonging to family Adiantaceae and Sinopteridaceae are also used by local people. The dominant families, genera and species used for curing human diseases are mentioned in graph. The taxonomical analysis indicates that Fabaceae is the dominant family among species used in ailments of human diseases followed by Asteraceae, Euphorbiaceae, Lamiaceae, Solanaceae and Apocynaceae. About 70% of species were reported from the 13 families (Graph VI-1). The number of species used from each families indicates significance of these families for local communities. The generic significance of species were analyzed on the basis of maximum number of species from each genera. In all, Solanum was the most significant genera among the list of 179 genera followed by Cassia, Terminalia and Acacia (Graph no. VI-2).

The comparative analysis of number of human diseases and species available for ailment of the respective diseases indicate that most of the people are well aware about the various species used in intervention for skin diseases (65 species; 15% of total species used in human diseases) followed by Fever (35 species, 8%), R. disorder (28 species, 7%), Stomach (27 species, 6%) and U. disorder (26 species, 6%). It sounds that there may be high infections of these diseases among the local communities. The lowest number of species were noted in Cancer (4 species, 1%) and Earache (5 species, 1%) (Graph VI-3 and Graph VI-4).

Diseases wise comparative statement of percentage use of plant species in above graph maximum species were used for skin diseases and minimum species for earache and cancer. Following graph showing maximum species, genera and families used for human diseases. It gives information that the tribal people were using majority of plants for skin diseases 65, fever 35, respiratory disease 28, piles and snake bite 20, stomach ache 27, urinary disorder 26, wound healing 24, diarrhoea and dysentery 23, gynecological problem 21, piles and snake bite 20, Jaundice 18, acidity 15, bodyache 14, tonic and tooth ache 13, rheumatism 12, scorpion bite and headache 11, eye diseases and diabetes 10, ear ache and cancer 5 and 4 respectively (Graph VI-5).
In these ailments some plants were repeatedly used for different ailments, it includes *Calotropies procerea* (Ait) R.Br., *Vitex negundo* L. are used in higher number, followed by *Bauninia recemosa* Lamk, *Embilica officinalis* Gaertn., *Pogostemon benghalensis* (Burm.f.) O. Ktze. and *Ricinus communis* L., *Achyranthus aspera* L., *Caesalpinia bonduce* (L.) Roxb., *Calotropis gigantea* (L.) Ait, *Eleusine coracana* (L.), *Terminalia chebula* Retz. and *Woodfordia fruticosa* (L.) Kurz. for six diseases. While others like *Aloea vera* (L.) Burn., *Careya abrorea* Roxb., *Cassia fistula* L., *Carissa congesta* Wt., *Ficus racemosa* L., *Tinospora cordifolia* (L) L.Kurz. and *Solanum anguivi* Lam in five diseases (Graph VI-6).

Habit wise classification includes trees, shrubs, herbs, climbers and their parts used for medicinal purpose. (Graph VI-7).

The majority of tribal or local people used leaves on priority basis followed by roots, bark, fruits, seeds, stem, flowers, latex, rhizome and whole plant. Petiole, bulb and sap are rarely used. It clearly indicates that highest consumption pressure is on the leaves followed by roots.

Most of the plants were collected from wild resources, weeds and cultivated in kitchen garden or in fields. Epiphytes and parasites were collected and used by tribal communities shown in graph. From the graph it can be concluded that most of the trees, shrubs and climbers medicinally important for human diseases are directly collected from the wild and few of them are cultivated whereas in case of herbs the cultivated species are more in number as compared to that of the wild (Graph VI-8).

Roots are major part of the plants used in medicinal purpose. Maximum roots of herbaceous plants 17.34%, 14.28% of shrubs, 11.22% of climbers and 8.16% of trees. If the utilization of roots is maximum, the plant will vanish. To avoid this, major efforts should be undertaken for the plantation of trees, shrubs, climbers in forest areas or in Kitchen garden of tribal or Bhagats. Although maximum utilization of roots are from herbaceous species but roots usage of trees, shrubs and climbers can severely affect the natural resources available in their areas as other than herbs, all life forms constitute more than 80% of the total species (Graph VI-9 and VI-10).
VI-3: Animal diseases

Ethno-veterinary practices in rural areas of Bhor taluka were prominently observed. The classification of data revealed that 89 species from 85 genera and 51 families were used for 16 animal diseases. The taxonomical analysis of the species unused in animal diseases showed that maximum number of species were used from Lamiaceae family followed by Asteraceae, Liliaceae and Poaceae. The species from these four families constitute about 35% of total number of species used in treatments of various diseases of animals (Graph VI-11).

The comparative data of taxonomical analysis of species used in animal and human diseases indicated that about 88% of total species under study are utilized in human diseases whereas about 53% of total species are used in animal diseases. The combined usage analysis for human and animal treatment showed that 26.84% species are useful in diseases of both animal and human. Some species were specific for animal and human diseases in which 27 species were found useful only in animal diseases whereas 142 species were only useful in human diseases. It is also important to note that there are alternative species available for many diseases in human whereas in animal diseases, the species diversity useful in treatment of various diseases is limited (Graph VI-12).

The comparative statement of species used for animal diseases were given below. It reflects that maximum plants used for dysentery and diarrhoea 16.13% of total species, 16 genera and species belongs to 14 families. Wound healing purpose tribals used 15.12%, 15 species, 14 genera from 12 families. Maggoty wounds 13.10% species used which were belong to 13 species, genera from 11 families, Snake bite 10.8 %, 10 species, genera and 7 families, lactation 9.7% 9 species, genera and 7 families, bloat 8.6% species having 7 families and genera, insect repellant, ticks and deworming 7.6% having 7 genera and 6-7 families, cough and cold, fever, conjunctives and retention of placenta 5.4% having 5 plant species, 5 genera and 3-5 families were covered, prolapse of uterus, liver diseases and yoke gall 4.3% plant species belongs to 4 species, genera and family (Graph VI-13 and Graph VI-14).
The detailed analysis with respect to the uses of each species in various diseases of animals indicated that there is high usage pressure on species like *Pogostemon benghalensis*, *Azadirachta indica*, *Achyranthus aspera* etc. Tribal or local people from the study area were used *Pogostemon benghalensis* on first priority. *Azadirachta indica* leaves were used on second priority. *Achyranthus aspera* L., *Annona squamosa* L., *Grewia tilifolia*, *Leucas stilligera*, *Lobalia nicotinianafolia* and *Nicotina tabacum* were used for different diseases in livestock. *Acorus calamus*, *Allium cepa*, *Bambusa arundinacea Colebrookea oppositifolia*, *Calotropis*, *Carica papaya*, *Cassia tora*, *Gmelina arborea*, *Jatropha curcas* and *J. gossypifolia*, *Maduca longifolia*, *Plumeria alba*, *Punica gratium* and *Tinospora sinensis*, *T. cordifolia* and *Woodfodia fruticosa* were used for animal diseases in lower priority (Graph VI-15).

The availability of some of these species in wild is reducing day by day in which *Lobelia nicotiniaefolia*, *Nicotiana tabacum*, *Tinocpora cordifolia* like species are included. The analysis of plant parts used in animal diseases showed that Wound, Snake bite, Diarrhoea and dysentery in animals are well treated by number of plant parts (7 to 8) followed by Bloat, Prolape uterus., Yolk gall etc. whereas less number of plant parts are used in diseases like Insect repellent, Fever 2, Retain placenta and Lactation. The diversity in number of plant parts used in each disease also indicates the wideness of occurrence of respective diseases (Graph VI-16).

The overall pressure on various plant parts exerted due to usage in human and animal diseases were compared together and represented with clustered bar graph and stacked bar graph for analysis. It was noted that the trend of existing pressure on various plant parts used in animal diseases is more or less same as that of the human diseases except in petiole and seed. There is no usage of petiole in any diseases of animal whereas seed are useful less number of diseases than that of the leaves. The stacked bar clearly indicates that the usage pressure on leaves and seeds are highest almost similar in both types of diseases followed by bark, stem, fruits and flowers. The least pressure was noted on petiole followed by sap (Graph VI - 17 and Graph VI - 18).

It is observed - in both the diseases utility of leaves were maximum, seeds, bark, stem, flowers and fruits were comparable. While petiole, bulb and rhizomes utility was minimum. Disease wise classification also strengthening point that leaves were used for skin disease and wound healing purpose followed by Dysentery & diarrhoea in human and bloat in animal diseases. Minimum use of leaves were seen in earache in human and Conjunctives and lactation in animal diseases.
The high consumed or highly pressurized plant parts were analyzed further to understand the number of species involved and number of diseases under treatment of animal and human beings. In case of human diseases, maximum 39 species are available for treatment of skin diseases whereas in animal diseases maximum 14 species are available in wound disease. In all, leaves are used in 16 diseases of animals and 21 diseases of human. The average number of species available for each disease in human is 12.14 whereas in animal disease it is only 4.88 (Graph VI - 19).

Bark of trees and shrubs were playing major role in human and animal diseases. Skin diseases in human beings and to control dysentery and diarrhoea maximum bark were used. Even in dysentery and diarrhoea of human bark was used in second priority. Snake bite is major problem in tribal areas bark of different plant species were used for human and animal bite cases. Eye diseases, toothache and acidity bark used in less quantity for human diseases. Prolapse of uterus, conjunctivitis, yoke gall, liver disease and lactation minimum bark of plant resources were used for animal diseases.

In all bark is used in treatment of 28 diseases of which 10 are animal diseases and 18 are human diseases. The average no. of species available for treatment of each disease in human is 4.17 whereas in animal disease it was 2.1 (Graph VI - 20).

Rhizomes were used only for piles and earache in human and liver disease and conjunctivitis in animals (Graph VI-21).

Stem part of the plant material was useful in many diseases in human and animal. Fever of human was cured by stem and in livestock bloat and dysentery / diarrhea cured. Minimum stem part was used for scorpion bite, eye diseases and headache in human while maggots, prolapse of uterus, liver diseases, cough and cold and fever (Graph VI-22).

Maximum utilization of flowers for curing diseases were fever, pile, gynecological problem, skin diseases in human and wound healing in animal. Minimum usages of flower was mainly for dysentery & diarrhoea, rheumatism, earache, bodyache, acidity and cancer in human while dysentery & diarrhea, bloat, prolapse of uterus, snake bite, retention of placenta and ticks (Graph VI-23).
VI-4: Validation of ethno-veterinary claims

Validation of ethno-veterinary study was carried out among 130 animals from the Bhor region and giving positive response to the treatments. Plant parts used in the study are *Pogostemon benghalensis* (Burm. f.) O. Ktze., *Colebrookea oppositifolia* J. E. Smith, *Gnidia glauca* (Fresen.) Gilg. *Woodfordia fruticosa* (L.) Kurz. *Azadirachta indica* A. Juss., *Aegle marmelos* (L.) Coirr. *Tridax procumbens* L. and *Lavandula bipinnata* (Roth.) O. Ktze., *Annona squamosa* L., *Mentha spicata* L. and *Momordica charantia* L. Leaf powder of *Tridax procumbens* L. applied to 16 animals wounds, Nine female and seven male animals were respondent to herbal medicines, healing process requires 4 - 5 days.

Leaf powder of *Gnidia glauca* (Fresen.) Gilg. along with oil was applied on two animals. Both animals wound were cured in 4 days.

The large or small ruminants generally suffered with maggoty wounds (known as blue bottle fly - Calliphora vomitoria.). *Gnidia glauca* (Fresen.) Gilg leaf powder used on two animals, wound maggots were controlled with in 3 days. *Lavandula bipinnata* (Roth.) O. Ktze - leaf powder was tested on 11 animals. Wound maggots was control within 3 - 4 days. *Annona squamosa* Leaf powder was applied on 15 animals, controlled maggots with in 3-4 days. Leaf power of *Momordica charantia* L. tested on 10 animals, Control of maggots takes place with in 3 days.

Dysentery and diarrhoea in animals controlled by using single dose of *Woodfordia fruticosa* (L.) Kurz., *Aegle marmelos* (L.) Coir. and *Mentha spicata* L. The results are positive in livestock of farmers like Jersey cow, buffalo, bull and calf.

Combination of two plant parts were tried two animals. *Woodfordia fruticosa* (L.) Kurz. and *Mentha spicata* L. treated with flower powder and leaf powder given to two buffalo. One animal cured with herbal medicine and one has severe dysentery and late arrival for the treatment hence not cured. Similarly, one H.F. calf having age of 1.6 years, treated with *Aegle marmelos* (L.) Coirr and *Woodfordia fruticosa* (L.) Kurz. Dysentery of animal was not control due to herbal treatment due to chronic dysentery.
DISCUSSION

Diarrhoea has long been recognized as one of the most important health problems in developing countries. It is defined as an increase in the frequency, fluidity, or volume of bowel movements and is characterized by increased frequency of bowel sound and movement, wet stool, and abdominal pain. In clinical terms it is used to describe increased liquidity of stool, usually associated with increased stool weight and frequency. Treatment of diarrhoea is generally nonspecific and is usually aimed at reducing the discomfort and inconvenience of frequent bowel movements. To overcome the menace of diarrhoeal diseases in developing countries, the World Health Organization (WHO) has included a program for the control of diarrhoea, which involves the use of traditional herbal medicine. Gupta et al. (2009) recorded method of using plants for diarrhea by Gond tribe. A single plant part or a combination of several plant parts usually makes the preparations. Sometimes combination of two or more different plant species are also used. In some treatments, animal product is used along with the plant material. Medical administration includes mostly oral administration. Kulkarni et al. (2002) recorded plants from Mahadeokoli tribe for anti-diarrhoea, anti-dysentery and stomach disorder from Western Maharashtra.

In present survey, 23 plants are reported for dysentery and diarrhoea in human and 16 in livestock. Out of which Woodfordia fruticosa (L.) Kurz. Pterocarpus marsupium Roxb. Holarrhena pubesens (Buch-Ham) Wall. ex. G. Don. Terminalia chebula Retz., fruit of Aegle marmelos (L.) Coirr are well known from literature survey. Securinega leucopyrus (Willd.) Muell.-Arg., Pavetta crassicaulis Bremek. and Maytenus senegalensis (Lam.) Excell and Mentha spicata L. are reported first time from wild sources. From the graph it can be concluded that most of the trees, shrubs and climbers medicinally important for human diseases are directly collected from the wild and few of them are cultivated whereas in case of herbs the cultivated species are more in number as compared to that of the wild.

Scorpion sting and snake bite are serious problems in India. The tribal and non-tribal people prefer herbal treatment in scorpion sting and snake bite. There are few herbs which have magical and wonderful effects. It has been observed that a group of inhabitants called Saperas have an excellent herbal remedies. Some other rural physicians have also adequate knowledge of herbs used in the treatment of these ailments and they whisper certain mantras during the courses of treatment, although it has not been confirmed whether these utterings are effective or not.
However, the tribal and non-tribal people have deep faith on these mantras and herbal remedies prescribed for the treatment of these ailments. They also believe on eating leaves of Nim (Azadirachtra indica A. Juss) in temple and it will cure due to faith in God/Goddess.

Dwivedi et al. (2009) recorded 8 plant species as herbal remedies for scorpion sting and snake bites by the tribal and non-tribal people of the Malwa region. The data indicates great importance of indigenous knowledge in therapeutic uses. One of the plant species, Martynia annua L., is an excellent remedy for scorpion sting. On the other hand, Rauwolfia serpentina (L.) Kurra and Tephrosia purpurea L., are excellent for the treatment of snake bites. Sida spinosa L. and Cassia surattensis Burm. f. ssp. glauca (Lam.) K. & S. are effective in scorpion sting and snake bite used by Dhangar and Gawali from Purandar area of Pune district (Bhosale et al., 2009). Bhagat or Vaidus from Bhor region using 11 plants for scorpion sting and 20 plants for snake bite in human and 10 plants were used for livestock in snake bite.

Wounds are physical injuries that result in an opening or break of the skin. Proper healing of wounds is essential for the restoration of disrupted anatomical continuity and disturbed functional status of the skin. Healing is a complex and intricate process initiated in response to an injury that restores the function and integrity of damaged tissues. Wound healing involves continuous cell–cell and cell–matrix interactions that allow the process to proceed in three overlapping phases viz. in ammation (0–3 days), cellular proliferation (3–12 days) and remodeling (3–6 months). It involves platelet aggregation and blood clotting, formation of (brin, an in) ammatory response to injury, alteration in the ground substances, angiogenesis and re-epithelialization. Basic principle of optimal wound healing is to minimize tissue damage and provide adequate tissue perfusion and oxygenation, proper nutrition and moist wound healing environment to restore the anatomical continuity and function of the affected part. Many traditional practitioners across the world particularly in countries like India and China with age old traditional practices have valuable information of many lesser-known hitherto unknown wild plants used by the traditional healers for treating wounds and burns. Several drugs of plant, mineral and animal origin are described in the traditional texts of Indian systems of medicine like Ayurveda for their healing properties under the term ‘Vranaropaka’. Besides the classical systems of Indian Medicine, the folk and the tribal medicine also employ a number of plants and animal products for treatment of cuts, wounds and burns (Kumar et al. 2007). Traditional medicines were used in
Bhor region for wound healing purpose in human and animals. Different types of wound treated with 24 plants were used for different types of wound, cuts, burn, etc. in human while 15 plants were used for animal wounds. The validation of wound healing plants were carried out and Pogostemon benghalensis (Burm.f.) O. Ktze., Colebrookea oppositifolia J.E.Smith, Gnidia glauca (Fresen.) Gilg., Azadirachta indica A. Juss., Tridax procumbens L. and Lavandula bipinnata (Roth.) O. Ktze. showed positive response. The first report of plants Lavandula bipinnata (Roth.) O. Ktze. Colebrookea oppositifolia J. E. Smith., Pogostemon benghalensis (Burm.f.) O. Ktze. and Gnidia glauca (Fresen.) Gilg. for wound healing purpose.

Diabetes mellitus (DM) is the commonest endocrine disorder that affects more than 100 million people worldwide (6% of the population). It is caused by the deficiency or ineffective production of insulin by pancreas which results in increase or decrease in concentrations of glucose in the blood. It is found to damage many of the body systems, particularly the blood vessels and nerves. For its therapy along with the synthetic drugs, many agents of the plant origin are also in used particularly for the treatment of non insulin dependent diabetes mellitus (NIDDM). Over the centuries, Indian herbal drugs have served as a major source of medicines for the prevention and treatment of diseases including diabetes mellitus. The study was performed in the desert region with the aim of producing an inventory of the plants used by traditional healers in tribal pockets of Rajasthan to treat diabetes, A list of over 50 plants that are present in arid zone of Rajasthan having antidiabetic potentials (Menghani et al 2010). The traditional healers from Bhor region were treating diabetic patient with 10 plants.

Skin diseases are mostly common infectious may be bacterial or fungal affecting all age groups from the neonate to the age-old. They are mainly due to unhygienic conditions of sanitation, practices of frequent application of cow-dung on floor and scanty water; this results in number of harmful disorders. Studies indicated that enormous undiagnosed, untreated skin diseases have been reported from such remote places. In the last few years, the numbers of immune suppressed or compromised patients have increased dramatically. These conditions frequently develop opportunistic systemic and superficial mycoses, such as candidiasis, dermatomycosis, fungal infections etc. Some time tested house hold remedies are practices in rural India. Shome et al 1996 recorded plants like Azadirachta indica A. Juss., Berberis aristata Colebr, Bomax ceiba L. Buchanaia lanzan Spreng, Calotropis procera (Ait) R.Br. Cocos nucifera L. Lallemantia royleana Benth, Lawsonia inermis L. Mallotus philippensis Muell - Arg., Piper betle L. and Syzygium
aromaticum Merr and Perry. Tribal people or herbalists from Bhor region are using 65 plants for Dry boil, Vitiligo, Scabies, Pimple, Cracked feet, Athletes of foot, Swollen cheeks, Eczema, Alopecia patch, Herpes, Ringworm, Leprosy, Abscess and Leucoderma.

Jaundice is called as *Hariman* disease in Rigveda (8000 BC). The first record of hepatitis was reported by Hippocratic School in 200 BC (Nene, 2007). Jaundice is a viral disease known to spread through poor sanitation and contaminated drinks and foods. It disturbs the function of liver and consequently secretion of bile. The eyes and urine become yellow and the patient looses appetite, feels too much weakness and fatigue ultimately and succumbs to jaundice in case of severe attack.

In this disease herbal treatments are prescribed since the times of Charaka (700 BC). The jaundice is called as *Kamala* and some traditional treatments like Powder of *Lauhabhasma* (iron ash), Haritaki (*Terminalia chebula* Retz.) and Haridra (*Curcuma longa* L.) mixed together with honey and ghee. Dhatri (*Embelica officinalis* Gaertn.), *Lauhabhasma* (iron ash), *Triktu* (dry ginger, long pepper and black pepper) and turmeric together are administered with honey and ghee. It is claimed to alleviate even the severe jaundice (Vidyalankar, 1994). Hemadri & Rao, (1984) collected information on 17 plants commonly practiced for jaundice from the *Dandakaranya* area covering Korapur and Phulbani districts of Orissa, Bastar district of Madhya Pradesh, the vast belt of eastern Ghats of Andhra Pradesh and Maharashtra. Tribal or local people from Bhor region were using 18 plants for Jaundice. Some plants are not used elsewhere such as *Jatropha curcas*, *Musa paradisca*, *Cassia fistula*, *Woodfordia fruticosa*, *Barleria prionitis*, *Lavendula gibsoni*, *Curcuma aromatica* etc. *Caesalpinia bonducella* leaf juice and jaggery are used as vehicle to control jaundice within fifteen days. Generally fruits of *Luffa acutangula* var. *amara* are used to cure jaundice. In this region, leaf juice and fruit juice drops are administered in one nostril for 3 to 4 days. When yellow watery liquid oozes from the nostrils, the herbalists confirm the effect of the drug. Samvatsar and Diwanji (2000) has mentioned that dry fruit powder of the *Luffa acutangula* var. *amara* is used as snuff in jaundice so the point may not be that moot. Due to moot point viral infection like jaundice can be cured by external application. But the tribals have been found to use these measures with full faith and confidence.
Rawat et al (2010) recorded 32 different plant species belonging to 24 families are used for dental hygiene. It includes 18 trees, 9 shrubs, 2 undershrubs and 5 herbs for dental hygiene from Himachal Pradesh. Similarly, tribal people from Bhor region were using 13 plant resources for toothache.

Folklore systems of medicine continue to serve a large segment of population, especially those in rural and tribal areas, regardless of the advent of modern medicine. The entries regarding the multifarious applications of *Vitex negundo* L. in folk medicine have been grouped regionally to emphasize the ethnobotanical diversity and ubiquity of the plant. All parts of the plant, from root to fruit, possess a multitude of phytochemical secondary metabolites which impart an unprecedented variety of medicinal uses to the plant. It is interesting to note that a single plant species finds use for treatment of a wide spectrum of health disorders in traditional and folk medicine; some of which have been experimentally validated. The plant is a component of a number of commercially available herbal formulations and has also shown potential as an effective bio-control agent. (Vishwanathan and Basavaraju, 2010). Tribal people or local people from Bhor region were used all parts of *Vitex* nedungo L. on first priority due to easy availability and multifarious use.

The literature search on ethno medicinal uses of every plant part of *Calotropis procera* (1968-2009) and its medicinal properties used for the treatment of various ailments as in the case of many types of fevers, rheumatism, indigestion, cough, cold, eczema, asthma, elephantiasis, nausea, vomiting and diarrhoea, etc. The review includes accounts of medicinal values of all parts of the plant that have been used in folk medicine as a remedy. (Verma, et al. 2010). Ethno-medico-botanical survey of Bhor taluka was made and realised that tribal people used *Calotropis procera* for different types of traditional medicine on top priority.

*Achyranthes aspera* L. (Family Amaranthaceae) is a common plant of the study area abundantly found in wastelands. The plant is highly esteemed by traditional healers and used in treatment of asthma, bleeding, in facilitating delivery, boils, bronchitis, cold, cough, colic, debility, dropsy, dog bite, dysentery, ear complications, headache, leucoderma, pneumonia, renal complications, scorpion bite, snake bite and skin diseases etc. Dwivedi et al. (2008) reported as magic herb in folk medicines. He reported 27 uses of folk medicines and their different plant parts. Local and tribal people from Bhor region were used *Achyranthes aspera* L. for many diseases on priority basis.
A leaf part of *Securinega virosa* (Willd.) Mull. Arg. was used to control scabies, other skin diseases, vermifuge in Vidarbha region of Maharashtra. (Phani Kumar and Chaturvedi 2010). Tribal people from Bhor region were used *Securinegaleucopyrus* (Willd) Muell- Arg. plant for eye disease, dysentery and diarrhoea.

Leaf of *Aloe vera* (L.) Burm. f. were used rheumatism, body weakness and in the treatment of pimples or acne in Pakistan. (Hussain et al. 2010). Ethnobotanical uses of *Aloe vera* were recorded (Kulkarni et al., 2001). The plant has been growing in kitchen garden for medicinal use in tribal pockets of Bhor region. On priority basis the juice of leaves used for five diseases in the region.

A general ethno-medicinal survey among Dhangar and Gavali were made by Bhosale et al (2009) from Purandhar taluka of Pune district and total of 77 plants from 30 different families have been documented for their healing properties. Of these, 11 plants were reportedly used to treat different type of stomach and urinary problems; 6 were used in the treatment of muscle and joint pains; 5 for treatment of stroke and excessive heat; 4 for relief of asthma while 4 others for the healing of wounds; and 3 for treatment of skin diseases and infections. On this background Bhor region is adjacent to Purandhar taluka and local people use 65 plants for skin disease, respiratory diseases 28, stomach pain 27, urinary disorder 26 and body pain 14. This indicate that tribal or local people from Bhor have vast knowledge of ethno-medicinal plants compared to Dhangar and Gavali people.

In ancient India people had sufficient knowledge of the diseases of farm animals and the method of curing them. The diagnosis of diseases and treatment in the olden days may appear to be quite crude, but it was effective. In those days oil, powder of roots, ghee, Ginger, Turmeric, Vidanga, Kutaja, Citraka, Manjistha, Devadaru, Vala, Jatamashi, Asvagandha, Asafoetida, Wheat flour, Myrobalans, etc. were used for cattle organs like horns of cattle, roots of the ears, eyes, tongue, on diseases like dysentery, cough, fractures, mouth ulcers, etc. The ointment prepared from sesamum, ambhakaruha, yellow orpiment and ghee is excellent for applying on the open wounds of the cattle. Oil cake is considered to be an elixir for the cattle. A nasal application for asthma and cough was administered. Long pepper, rock salt, sara, dry ginger mixed with jaggery are useful in removing the phlegmatic disorders of horses. Such type of treatments were reported and similar traditional knowledge exist in the many parts of the country. (Raychaudhuri, 1964). In Bhor region local people were using 120 plants for veterinary diseases. The doses are very effective for bloat, wounds, dysentery and diarrhea, fever, cough and prolapse of uterus, etc.
In present survey of Bhor taluka, 16 animal diseases were recorded and for each disease different or same plant species and different plant parts were used like dysentery and diarrhoea 16. Wound healing 15, Maggoty wounds 13, Snake bite 10, lactation 9, bloat 8, insect repellant, ticks and deworming each 7, cough and cold, fever, conjectives and retention of placenta each 5, prolapse of uterus, liver diseases and yoke gall each 4 species were used. Documentation of traditional knowledge and practice of EVM was major achievement in the study. It was also helpful for conducting validation at different farmer’s livestock. The diversity in number of plant parts used in each disease also indicates the wideness of occurrence of respective diseases. The average number of species available for each disease in human is 12.14 whereas in animal disease it is only 4.88.

Lans et al. (2007) carried out non-experimental validation of ethnoveterinary remedies and findings showed that some plants are high levels of validity. They were used wild arnica (Arnica sp.) leaves or flowers (1 or 2) are rubbed on to bruises or the crushed leaves are bandaged on the wound. A treatment consists of the infused oil of St. John’s Wort (Hypericum perforatum) (2 cups of olive oil and 1 1/2 oz (50 g) Hypericum flowers in a glass jar, stored in the dark for 2 months before straining and using. It will heal deep wounds.

All ruminants are treated for flystrike (maggot infestation) with comfrey salve, if the wound is partially healed or if it is not deep. Pine tar was applied and maggots killed.

A combination of fresh plants leaves (Plantago sp.), flower heads of calendula (Calendula officinale), tops of nettles (Urtica dioica) and leaves of comfrey (Symphytum officinale) was given. If blood was seen in the stool, 1/2 tbsp of slippery elm bark powder (Ulmus fulva) was added. Calendula (Calendula officinalis) flower head tea is given to calves with sore stomachs.

Branches of long needle yellow pine (Pinus ponderosa) are put in the pen of young animals (four weeks old, still nursing) with grey pasty diarrhoea. They can then eat it free choice. Animals will self-medicate with aerial parts of fresh cinquefoil (Potentilla sp). An alternative treatment consists of a drench made with 1 part or 1 tsp marshmallow (Althaea officinalis), 1/2 part dill seed (Anethum graveolens), 1 part bark of white willow (Salix sp) and 1 part inner stem bark of slippery elm (Ulmus fulva). If not already powdered it is ground and mixed with water before drenching. A pinch of cinnamon (Cinnamomum zeylandica) and a
pinch of ginger (*Zingiber officinalis*) can be added. If there is blood in the feces then 1/4 part cloves (*Syzygium aromaticum*) is added to control coccidia. A dose of 2 tbsp is used for animals over 50 lbs. A dose of 1 tbsp is used for animals under 50 lbs. The drench is given once a day until the diarrhoea stops (two to three days).

Ghotge and Ramdas (2008) has made social validation on different diseases of animal and poultry. In this method 10-12 diseases affecting livestock like Bloat, anorexia, diarrhea and worms and 5-6 diseases of poultry like white diarrhea, fowl pox, worms. *Acanthospermum hispidum* DC (leaves for fresh wound), *Alpinia galangi* (L.) Swartz. (Rhizome- bloat and Anorexia), *Annona reticulate* L. (Leaves-ticks, Skin allergy and wound), *Azaradichia indica* A. Juss (Leaves - diarrhea, bloat, stem bark-bloat and pneumonia), *Bambusa arundinacea* (Retz.) Willd. (leaves-Retention of placenta) *Bombax ceiba* L. (Stem bark-diarrhea), *Carum copticum* (L.) Hiern (Seeds-bloat and Anorexia), *Cassia tora* L. (Leaves - diarrhea), *Cymbopogon citratus* (D C.) Stapf. (leaves - Tick), *Embilica officinalis* Gaertn. (Leaves - bleeding wound and simple wound), *Holerrhena pubescence* (Buch-Ham.) Wall. (stem bark-diarrhea and pneumonia) *Leucas stelligera* Wall. (Leaves - bloat, poisoning and yoke gall), etc.

Validation treatment were carried out on 130 animals from Bhor region. *Pogostemon benghalensis* (Burm.f.) O. Ktze., *Colebrookea oppositifolia* J. E. Smith, *Gnidia glauca* (Fresen.) Gilg. *Woodfordia fruticosa* (L.) Kurz. *Azadirachta indica* A. Juss., *Agele marmelos* (L.) Coirr. *Tridax procumbens* L. and *Lavandula bipinnata* (Roth.) O. Ktze., *Annona squamosa* L., *Mentha spicata* L. and *Momordica charantia* L. leaf powders, flower powder and fruit powder were tried for wound healings, maggoty wounds, diarrhea and dysentery. Some combinations of two plants and three plants tried for maggoty wounds and wound healing purpose. Single simple plant material tried for dysentery and diarrhea and two plants combination for few animals. All these validation practices has given positive response and only two cases of diarrhea and dysentery were not cured.

The results and discussion are major part of the ethno-medico-botanical research carried out in a small tribal or non-tribal region of Bhor.