**SOME LESS KNOWN TRADITIONAL PHYTO-ZOOTHERAPIES IN KALSUBAI HILLS OF AKOLE TAHASIL IN AHMEDNAGAR DISTRICT (M.S.) INDIA**

*Salave Ashok Punjaji*

Department of Botany, Shri Dnyaneshwar Mahavidyalaya, Newasa, Ahmednagar (M.S.)

India.

**ABSTRACT**

Frequent field visits were arranged in the study areas season wise during the period from pre-monsoon of 2012 to post-monsoon of 2013 to document information regarding traditional uses of native wild ethno-flora in the life of the local and experienced inhabitants, tribal medicine men which were actively engaged in doing the ethno-medicinal practices. The information is being collected from the local inhabitants through verbal interviews in an informal ways at their working places during the period from pre-monsoon of 2012 to the post-monsoon of 2013. The paper focuses on the phyto-zootherapeutic uses of 18 plant species belonging to 14 families among the local inhabitants in their life.

**KEYWORDS:** Phyto-zootherapy, Kalsubai hills, Traditional knowledge.

**INTRODUCTION**

Humans interactions have been started with their surrounding environment, especially plants since ancient time for certain needs and necessities viz. food, medicine, fodder, agricultural tools, house construction etc including healing traditions, due to which modern synthetic herbal drugs have been arrived at the end of 20th century [1]. Being a part and parcel of the nature, in developing countries like India [2], man has realized use of certain wild plants by the traditional healers, hakims and ethnic societies of the world either as a food or as herbal drugs. Use of these plants and their parts had contributed so much to the field of ethnobotany by fulfilling certain social, spiritual and cultural needs of the rural, aboriginal and tribal people with traditional and eco-friendly manners.
Study area: Being a beautiful hilly landscape, Kalsubai hill is one of the highest peaks and spur spur of Sahyadri Mountain in Maharashtra state, famous for it’s for rich ethno-botanic diversity and is situated at an elevation of 5400 feet (i.e.1646 meters) from MSL (Mean Sea Level). It ranks 25th amongst the various peaks located in Western Ghats hills of India. It is situated on the south-west side of the Akole tahasil at a distance of 46 km in the Ahmednagar district (M.S) India. It is located in between 19°36’04”N-19° 36’18”N latitude and 77°42’33”E-73°42’68”E longitude. The area under study is occupied by 68% of mixed moist deciduous type of vegetation and experiences an average rainfall of 468 cm/year [3]. It remained inhabited to some extent by the native inhabitants for certain needs and necessities for curing specific livestock ailments.

The ethno-botanical information documented here is important to spread the traditional phyto-zootherapeutic knowledge at local and global level.

Review of literature: Recent interest in phyto-zootherapy explorations is increased due to the works [4-22].

Methodology: Frequent field visits were arranged in the study areas season wise during the period from pre-monsoon of 2012 to post-monsoon of 2013 to document firsthand information regarding traditional usage of the native wild ethno-flora in the life of the local inhabitants, age old tribal medicine men actively engaged in doing the ethno-medicinal practices. The plant specimens were collected under guidance of the knowledgeable informants by knowing local names [23-25].The information regarding traditional usage of the native wild ethno-flora in local phyto-zootherapeutics was confirmed through the traditional medicinal practitioners (TMPs) via oral interviews in an informal ways.

The voucher specimens were prepared and confirmed by referring the floras [26-28].They were preserved as per plan suggested [29] in the Department of Botany, P.V.P. College, Pravaranagar for future study.
**Enumeration/Result:** The taxa enumerated here are arranged alphabetically according to their botanical name with family (in parenthesis) followed by vernacular name, plant part used and traditional veterinary uses. Unknown or less known ethnobotanical uses are marked with an asterisk (*) sign.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Botanical name</th>
<th>Local name</th>
<th>Plant Part</th>
<th>Traditional veterinary uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Abelmoschus moschatus</em> Medik. <em>(Malvaceae)</em></td>
<td>Kastur-bhendi</td>
<td>Leaf</td>
<td>*A handful fresh leaves (aprox.100 gm) is crushed with a tsp of lasun (<em>Allium sativum</em>) extract and a pinch of common salt in a cup of mustard (<em>Brassica compestris</em>) seed oil and the paste is applied topically on the skin twice a day up to 12-15 days to cure scabies in dogs.</td>
</tr>
<tr>
<td>2</td>
<td><em>Acorus calamus</em> Linn. <em>(Arecaceae)</em></td>
<td>Vekhand</td>
<td>Root</td>
<td>A cupful of fresh roots extract made in luke warm water is mixed with equal quantity of extract from young Bartondi (<em>Morinda tinctoria</em>) fruits and same formulation is applied externally on bare body regions of the chicken and pigeons to retain feathers</td>
</tr>
<tr>
<td>3</td>
<td><em>Argemone mexicana</em> Linn. <em>(Papaveraceae)</em></td>
<td>Bilayat</td>
<td>Leaf</td>
<td>A handful of dry seeds are ground with 1-2 tsp of turmeric powder in a cup of Mahua (<em>Madhuca indica</em>) oil and the paste is applied topically once a day for 8-10 days to cure ringworm in pet dogs and cats.</td>
</tr>
<tr>
<td>4</td>
<td><em>Aristolochia bracteolata</em> Lamk. <em>(Aristolochiaceae)</em></td>
<td>Gindhan</td>
<td>Leaf</td>
<td>Two to three fresh leaves are crushed in a cupful of Erand (<em>Ricinus communis</em>) oil and the extract obtained is given applied externally twice in a day up to 8-10 days against dog bite poison in pet animals.</td>
</tr>
<tr>
<td>5</td>
<td><em>Citrus limon</em> Linn. <em>(Rutaceae)</em></td>
<td>Idlimbu</td>
<td>Fruit</td>
<td>* Fresh roots extracted in warm water mixed with 1-2 tsp of honey and lemon (<em>Citrus limon</em>) juice is given twice a day up to 8-10 days to dissolve iron matter in stomach of the pet animals.</td>
</tr>
<tr>
<td>6</td>
<td><em>Cleome gynandra</em> Linn. <em>(Capparaceae)</em></td>
<td>Safed Tilwan</td>
<td>Seed</td>
<td>An extract from a handful of fresh leaves in a cupful of cow’s urine is applied topically on pet animals once a day up to 6-8 days to drive away fleas and lice.</td>
</tr>
<tr>
<td>7</td>
<td><em>Clerodendron serratum</em> (Linn.)Moon. <em>(Verbenaceae)</em></td>
<td>Ransut</td>
<td>Root</td>
<td>An extract from aatpav (aprox.100 gm) sun dried roots in half litre coconut water is boiled up to 3-4 minutes and the decoction is drunk by pregnant women to overcome morning sickness.</td>
</tr>
<tr>
<td>8</td>
<td><em>Ficus microcarpa</em> Linn.f. <em>(Moraceae)</em></td>
<td>Nandruk</td>
<td>Leaf</td>
<td>* A handful of young leaves and tender shoots from the plant are boiled in equal quantity of Mohari seed (<em>Brassica compestris</em>) oil and til (<em>Sesamum indicum</em>) seed oil and the decoction is applied topically fractured bone in pet dogs and cats twice a day up to 21 days to relieve pains and cure.</td>
</tr>
<tr>
<td>9</td>
<td><em>Holarrhena pubescens</em> (Buch-Ham) Wall.</td>
<td>Safed kuda</td>
<td>Stem bark</td>
<td>One to two masa (aprox.1-2gm) fresh and young stem bark pieces are boiled in a half litre of cow’s urine up to 2-3 minutes and the decoction is fed to the children once a day</td>
</tr>
<tr>
<td></td>
<td><strong>Species</strong></td>
<td><strong>Family</strong></td>
<td><strong>Part Used</strong></td>
<td><strong>Preparation and Uses</strong></td>
</tr>
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</tbody>
</table>
| 10. | *Jatropha curcas* L. (Euphorbiaceae) | (Apocynaceae) | Fruit | Paste from aatpav (aprox.100 gm) fresh and tender leaves and same quantity of Rakta-kanchan (Bauhinia purpurea) root powder in a cupful of safflower (*Carthamus tinctorius*) seed oil is applied topically on the skin of pet animals twice a day up to a week to eradicate ticks, fleas and lice.  

| 11. | *Mimusops elengi* Linn. (Sapotaceae) | (Apocynaceae) | Leaf | Mixture of fresh leaf poultice and a handful (Aprox.250gm) soyabean (*Glycine max*) seed powder fresh and healthy leaves made in warm cow’s ghee is applied externally on fresh wounds of pet animals once daily up to total cure.  

| 12. | *Mitragyna parvifolia* (Roth.)Korth. (Rubiaceae) | (Apocynaceae) | Leaf | A handful of fresh and healthy leaves and same quantity of Gondhan (*Cordia gharaf*) tender leaves along with 4-5 small Kanda (*Allium cepa*) bulbs are fed to the cows and buffaloes twice a day to increase fertility and chances of conception prior to heat period.  

| 13. | *Momordica cochinchnensis* (Lour.)Spr. (Cucurbitaceae) | (Apocynaceae) | Leaf | Pavsher (Aprox.250gm) fresh and semi-ripen fruits are boiled in half litre water with chatak (Aprox.50gm) gur (Jaggery) and same formulation is fed to cows and buffaloes once a day for 3-4 days to the cattle to drive out intestinal worms.  

| 14. | *Parthenium hysterophorus* Linn. (Asteraceae) | (Apocynaceae) | Fruit | *A handful of fresh roots (aprox.100 gm) and same quantity of Kali Nirgudi (*Vitex negundo*) leaves are crushed together with a tsp of Kanda (*Allium cepa*) bulb extract to obtain paste which is topically applied on wasp or scorpion bite areas at an interval of half hour until total relief.  

| 15. | *Solanum anguivi* Lam. (Solanaceae) | (Apocynaceae) | Fruit | Aatpav (aprox.100gm) sun-dried powder from stem bark is crushed in warm certain quantity of cow’s urine and the paste is mixed with a pinch of hing root (*Ferula asafoedita*) powder and same preparation is topically applied on neck of chicken once a day at night up to 12-15 days to cure chicken pox.  

| 16. | *Tinospora cordifolia* Miers (Menispermaceae) | (Menispermaceae) | Stem bark | Two to three tolas (aprox.10-20 gm) fresh and young stem bark pieces, one to two tsp. Erand (*Ricinus communis*) seed oil and 4-5 Kadu-nimb (*Azadirachta indica*) leaves are boiled in a litre of goat’s milk for 1-2 minutes and same formulation is given orally to the patient twice a day for 7-9 days to arrest Q fever in sheep.  

| 17. | *Vitex negundo* Linn. (Verbenaceae) | (Menispermaceae) | Leaf | *Two to three tolas (Aprox.20-30 gm) of seeds with 1-2 tsp of sugar and 2-3 fresh sabja (*Occimum basilicum*) leaves are boiled together in a cup of goat’s milk for 2-3 minutes and the infusion is given twice a day for 2-3 days to treat mouth ulcers in buffaloes and bullocks.  

| 18. | *Withania somnifera* Dunal (Solanaceae) | (Menispermaceae) | Root (tuber) | Mixture of two to three tsp of root powder of same plant, aatpav (aprox.100gm) khajur (*Phoenix dactylifera*) and same quantity of gur (Jaggery) is fed to male buffaloes once daily in the morning to maintain sexual vigour and strength.
**Abbreviations:** tsp-tablespoon, 1 masa-1 gm, tola-10 gm, aatpav-100 gm, pavsher-250 gm, 1 cup-100 ml, half lite -500 ml.

**DISCUSSION**

During the field visits (table:1) 18 plant species belonging to 15 plant families have been reported from the study area. The native ethnoflora has been utilized by the local populace in curing certain ailments and also in fulfillment of certain demands. Some of the taxa viz. *Acorus* calamus (*Vekhand*), *Abelmoschus moschatus*(*Kastur-bhendi*), *Aristolochia bracteata* (*Gindhan*), *Argemone mexicana* (*Bilayat*), *Mimusops elengi* (*Bakul*), *Ficus microcarpa* (*Nandruk*), *Citrus limon* (*Idlimbu*), *Cleome gynandra* (*Pandhari Tilwan*), *Clerodendron serratum* (*Ransut*), *Momordica cochinchenensis* (*Ran-karle*), *Parthenium hysterophorus* (*Gajar gawat*), *Solanum anguivi* (*Laxmi- vange*), *Holarrhena pubescens* (*Safed kuda*), *Mitragyna parvifolia* (*Kalam*), *Jatropha curcas* (*Parshi Erand*), *Tinospora cordifolia* (*Gulwel*), *Vitex negundo* (*Kali-Nirgudi*) and *Withania somnifera* (*Askand*) possess potential of better economic exploitation.

Since all these taxa are being in use in more or less proportion throughout the world, they have wide scope for bio-prospecting. Therefore it is our prime duty to protect, conserve and maintain it in a proper way for our future studies.

Out of the plant species studied (table:2), majority of the preparations are from leaves and in eight plants (44.44%) followed by fruit in four plants (22.22%), roots in three plants (16.66%), stem in two plants (11.11%), and seed parts in one plant (5.55%) found to have certain ethno-pharmaceutic uses.

**Table: 2- Number of plant parts used with their percentage**

<table>
<thead>
<tr>
<th>Plant part used</th>
<th>Root</th>
<th>Leaf</th>
<th>Fruit</th>
<th>Stem</th>
<th>Seed</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of plant species</td>
<td>03</td>
<td>08</td>
<td>04</td>
<td>02</td>
<td>01</td>
</tr>
<tr>
<td>% of plant parts used</td>
<td>16.66</td>
<td>44.44</td>
<td>22.22</td>
<td>11.11</td>
<td>5.55</td>
</tr>
</tbody>
</table>

**CONCLUSION**

The study was carried out in the study area i.e Kalsubai hills is located in Akole taluka, under the Ahmednagar district jurisdiction to document and record a rich patrimony of empirical ethno-medicinal knowledge regarding the traditional uses among the local populace including the traditional herbal men, local Vaidyas and Hakims. Same knowledge is being passed to them from their forefathers through several generations verbally in an informal
The plant species studied, were selected for an ethno-pharmaceutical enquiries during the field surveys.

In all total, during the field visits (table: 1) 18 plant species belonging to 15 plant families have been documented from the study area with reference to their ethno-pharmaceutics.

Most of the traditional wisdom and wild ethnoflora in the country is eroding year after years due to modernization of ancient traditions and cultures. Due to continuous and progressive exposure of man to the modern age, extinction of such a rich heritage of knowledge in the coming time. Serious and heartily efforts should be initiated by the government, semi-government and non-government organizations (NGOs) for the conservation, documentation, computerization and maintenance of such useful ethnoflora and their rich heritage at national and international level.

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Author’s thanks are due to the help rendered by the notified and de-notified rural, tribal and non-tribal groups and traditional healers from the study area due to their immense help and co-operation during the study and field work. Thanks are also due to the authorities of Ahmednagar Forest division for immense co-operation and permission for collection of plant parts from plants of ethno-veterinary significance to prepare voucher specimens.

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