VALIDATION OF ETHNO-VETERINARY CLAIMS

Ethno-medicine is an integral part of traditional medical practices in many countries of the developing world. A large proportion of the population uses traditional knowledge of plants for the treatment for primary health care and for the treatment of ailments in their livestock. Ethno-veterinary medicine or ethno-veterinary research was defined by McCorkle in 1995 (Mathis and McCorkle, 2001). Ethno-veterinary Medicine (EVM) the term was coined for a specific approach to animal health care since 1980’s which was researched through using the basic documentation of anthropology research skills & techniques including observation, interview & participation (Khler Rollefson & Brunig 1998).

Mofakkarul Islam and Abul Kashem (1999) surveyed Ethno-Veterinary Medicines (EVMs) used by the farmers of a selected area in Bangladesh. Data were collected from a randomly selected sample of 110 households out of a total population of 1096 during October 20 to November 30, 1996. Through extensive field visits, personal contacts, case studies together with group discussions, 32 EVMs related to livestock and poultry bird rearing and management were identified in the study area. Regarding farmers’ extent of use of EVM by Ethno-Veterinary Medicine Use Indices (EVMUIs) scores, it was found that 31.25 percent of the EVMs was highly used as compared to 28.13 percent moderately used and 40.62 percent poorly used by farmers.

Livestock is a major asset for poor small holder farmers and pastoralists throughout the world and internal parasites are recognized by these communities as having an impact on livestock health. Parasitic infections are among those infections that traditional healers confidently treat and against which an enormous variety of remedies exist. Many of these are based on the use of plant preparations. Although various methods have been used for the validation of traditional phyto-medical preparations. There is a lack of standard procedures. (Githori et al. 2005). Shen et al 2010 carried out research on traditional ethno-veterinary knowledge related to the local social-cultural characteristics of Nu people and communities from China. Many Nu villagers (52%) considered traditional remedies as their first choice of animal disease treatment. Thirty-five animal conditions were identified in the surveyed area. The major and most common animal diseases among livestock were skin conditions, diarrhoea, heat, fevers, colds and parasites. Most ailments occurred between June and August. The ethno-veterinary medicinal use of 45 plant species was documented. Most of the medicinal species (86.7%) were collected from the wild. The most frequently used plant parts were whole plants (35.6%), followed by roots (22.2%). The most important medicinal plant species were *Saussurea costus* (Falc.) Lipech., *Senecio scandens* Buch.-Ham ex D.Don., *Plantago depressa* Willd., *Rubus corchorifolius* L.f.,
Animal diseases treated with the highest number of ethno-veterinary plant remedies were diarrhoea (16 plant species), heat, fever, colds (11 plant species), retained afterbirth (11 plant species) and skin conditions and sores (11 plant species).

Most small holder farmers in Kenya conventionally used market veterinary drugs have become very expensive and therefore unaffordable, causing them to seek low cost alternatives that are rarely documented in most ethno-biological studies. Survey in Central Kenya with the aim of the utilization traditional herbal preparations in managing cattle ailments, providing a comprehensive ethno-botanical profile and the most important plant species that may warrant scientific validation for efficacy and commercial utilization. Using semi-structured questionnaires and detailed discussions with smallholder farmers, a total of 40 plant species in 26 families were found to be useful in traditional management of various cattle ailments. Two plant families were particularly frequent in usage: Asteraceae and Lamiaceae, while the most utilized plant species were found to be *Synadenium compactum* N.E.Br. (Euphorbiaceae), *Solanecio manii* (Hook.f.) C. Jeffrey (Asteraceae) and *Senna didymobotrya* (Fresen.) Irwin and Barneby (Caesalpiniaceae). Informant consensus was particularly high in managing anaplasmosis, East coast fever and ectoparasites. Such plant species become key target in efficacy tests and for development of commercial veterinary botanicals. The usage of some of the species is unfortunately unsustainable as some of the species are rare or endangered hence the need for conservation strategies to be undertaken. (Nioroge, and Bussmann, 2006)

Syed et al. (2008) conducted study for documentation of the ethno-veterinary practices (EVPs) used for the treatment and/or management of reproductive disorders of cattle and buffaloes from Sargodha district of Pakistan. The information was collected using rapid and participatory rural appraisal techniques through interviews and focused group discussions with 217 traditional veterinary healers (TVHs) over a period of 16 months. The use of 66 plant species was documented for the treatment of reproductive disorders like genital prolapse, retention of fetal membranes, silent estrous/delayed puberty, anestrus, dystokia associated with incomplete cervical dilatation and retention of local discharge. Most frequently reported plants belonging to families like Apiaceae, Poaceae, Pedaliaceae, Linaceae, Arecaceae, Brassicaceae, Malvaceae, Zingiberaceae, Rosaceae, Cannabaceae, Fabaceae, Moraceae, Rubiaceae and Mimosaceae. All the documented plant species were indigenous. Some of the plants were reported to be used in more than one condition. Materials other than plants used for the treatment of these disorders included camel milk, butter and butter fat, minerals, eggs, organic matters, chemical substances and meat preparations. These materials were
used either alone or as adjunctive therapy. Richness of EVPs in the study area and extensive variation in the doses, methods of preparation, indications and claims regarding efficacy of plants for various disorders merit controlled studies for their validation.

A research conducted in Trinidad, it was noted that male farmers were using the traditional /reproductive knowledge to assist in the health care of their ruminants. Female farmers were using the same plants for their animals that they used for themselves (Lans and Brown 1998). ANTHRA an organization working on livestock development has been documenting & validating EVM since 1996 in different parts of the states of Andhra Pradesh & Maharashtra in India. ANTHRA chosen to study EVM because women farmers performed 50-90% of all every day activities related to livestock care but were denied aspects of the local EVM because knowledge was traditionally passed from father to son and women are not trained as traditional healers (Ghotge 2002). Ravikumar et al. (2004) carried out validation of ethno-veterinary practices adopted by farmers in Dindigul district of Tamil Nadu. Total 120 farmers were selected and twenty indigenous practices were documented. Out of which 11 for gastrointestinal disorders and nine for general health care management in livestock were recorded.

Lans et al. (2007) carried out ethno-veterinary survey in British Columbia, Canada. 128 plants were used for ruminant health and diets, representing several plant families. Non-experimental validation of ethno-veterinary remedies were made and findings showed that some plants are high levels of validity, *Hedera helix* for retained placenta and *Euphrasia officinalis* for eye problems. Plants with high validity for wounds and injuries included *Hypericum perforatum*, *Malva parviflora* and *Prunella vulgaris*. Treatments with high validity against endoparasites included those with *Juniperus communis* and *Pinus ponderosa*. Anxiety and pain are well treated with *Melissa officinalis* and *Nepeta caesarea*.

EVM in future may be increasingly linked to discussions and research on ecosystem health. EVM is now increasingly integrated into “participatory epidemiology” which seeks to improve epidemiological surveillance in remote areas and encourage community participation in disease control. Ethno-veterinary practices are parts of a complex system and isolating only one aspect for study precludes insights into the whole system. If a farmer controls worms in his animals through a combination of grazing management and herbal drenches, the drench alone may not produce a distinct effect in clinical trials. Also, the genetic makeup of the local breed may play an additional role in worm control. For such complex practices, systems research is needed to capture synergistic effects of the different aspects (Mathias, 2004).
Ethno-veterinary medicine is the scientific term for traditional animal health care. Research into ethno-veterinary medicine is often undertaken as a part of a community-based approach that serves to improve animal health and provide basic veterinary services in rural areas.

Bhor region of Maharashtra state and tribal or local people has basic knowledge of ethno-veterinary medicines (EVM). The farmers are using these herbal medicines for different remedies. Present study carried out at farmers field on wound healing, wound maggots and dysentery and diarrhoea practices.

**Validation of ethno-veterinary remedies**

The documented data on ethno-veterinary practitioners from Bhor region has been recorded. Non-experimental Validation of the remedies is discussed in present chapter. In this method generally diseased animals are treated with herbal material like powders, ointments and juices. There is no control animal used as in pharmacological experiments in human medicines tested in laboratory animals like rat or mice. A low-cost, non-experimental method was used to document and evaluate the potential efficacy of the ethno-veterinary remedies.

The literature search for the plant’s identified for veterinary medicines known by early workers and ethno-veterinary medicines effects of either the crude plant material and related species. Observing the effect of these plant on certain simple ailments of the animals over a period of time.

**Materials and methods**

During the validation process fresh plant material was collected from wild and kitchen garden of herbalists. Plants like *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. and cultivated plant *Mentha spicata* L. and *Momordica charantia* L. were used for treatments. These plants were selected on the basis of traditional knowledge of local people and herbalist.

The first attempt was made to test single plant material on wound healing as well as maggotty wounds. The results were encouraging and further combination of two to three plant material were tested. Similarly, dysentery and diarrhoea was controlled by single plant material and some combination of two or more plants were used for testing animal dysentery. External application of plant powder for wound healing and wound maggots with oil as vehicle. Powder was applied on wounds depending on area and size...
of wound, generally 15 to 25 gram for twice a day up to wound healing. Dysentery and diarrhoea leaves powder was given orally along with water and wheat floor, twice a day for 3 days or up to control. Specially prepared validation sheets were used for case documentation and interviewed 130 farmers participated in the validation process and their experience about herbal drugs were incorporated.

**Case study for documentation method**

*(Questionnaire)*

(ANTHRA, Pune)

<table>
<thead>
<tr>
<th>Name of farmer -</th>
<th>Village-</th>
<th>Taluka-</th>
</tr>
</thead>
<tbody>
<tr>
<td>District -</td>
<td>State -</td>
<td></td>
</tr>
<tr>
<td>Type of animal -</td>
<td>Gender -</td>
<td>Male / Female</td>
</tr>
<tr>
<td>Age of animal -</td>
<td>Weight of animal -</td>
<td></td>
</tr>
<tr>
<td>Disease -</td>
<td>Symptoms of disease -</td>
<td></td>
</tr>
</tbody>
</table>

Number of illness days -

Which remedy used –

<table>
<thead>
<tr>
<th>Date</th>
<th>Name of plant material</th>
<th>Dose per day</th>
<th>Doses</th>
<th>Effects (Cured/not cured/others)</th>
</tr>
</thead>
</table>
Observation data for each plant utilized for disease conditions - wound healing, wound maggot control and healing of wounds are as below:

**Tridax procumbens L.**

*Tridax procumbens* is seasonal weed available in the month of July to October. It is available abundantly in open barren and roadside area. This plant grows at eastern part of Bhor taluka (Plate V-1.4) (Table V.1)

**Disease –Wound Healing**

- No. of treatment days – 4-5 days
- Types of species /animals – Large ruminants (Cow, Buffalo, Bull)
- No. of animals under treatments - 16
- Plants parts used - Leaves
- Types of wound –Simple, Chronic
- Stages of wound Healing - Pain, oedema, inflammation, proliferation.

**Preparation of Medicine** – Leaves of *Tridax procumbens* were collected from open, roadside, wet land area. Collected leaves were shade dried about 8 to 10 days. The shade dried leaves were grind in grinder made into fine powder. Powder was filled in clean plastic jar and kept at cool and dry place and was used for wound healing.

**Results :**

- Rate of failure - Nil
- Rate of Success -100%

**Age factor for wound healing** – Wound healing in young animal take place earlier than older animal. Age factor is responsible for rapid wound healing. Average Age - 3 to 10 years

**Farmer’s remark** – Average treatment days was about 4 - 5 days. There was no side effect on animals. Farmers were ready to collect leaves of *Tridax* from the area and prepared medicine. Powder was used as best remedy for wound healing. This herbal medicine was free of cost, more effective, without side effects, convenient for application. Wounds were cured and there was no septic formation.
Literature search:

Human medicines: Dried leaf- Wound healing, Dried aerial part- Anti-diarrhoeal. 

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants. 

Veterinary use: Latur- Wounds (leaves), Medak- Cut and wounds., Pune- yoke gall. 400-401. 

ANTHRA 2008- Plants used in Animal care. 

Cut (Leaf), Wounds (Leaf and whole plant) - Sr. No. 743: 102. 


**Colebrookea oppositifolia J. E. Smith**

This is wild shrub available throughout the year and grown in forest area (Plate V-1.2) (Table V.2)

Disease – Wound healing

No. of treatment days – 4 to 6 days

Types of species /animals –Large ruminants – Cow, Buffalo, Bull.

No. of animals under treatments - 5

Plant parts used - Leaves

Types of wound – Simple, Septic.

Stages of wound healing – Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves were collected and shade dried for 8 to 10 days then ground in grinder and made into fine powder. This powder was stored in clean plastic jar kept at cool and dry place. The powder of leaves was used by farmers, local healers and informants.

**Results :**

Rate of failure -Nil

Rate of Success -100%

Age factor – As younger animals wound healing take place earlier than older animals.

Age - 3 to 7 years, average age - 5 years

Farmer’s remarks –Average treatment were 4 to 6 days. There was no side effect to animals. Colebrookea leaves powder was best herbal drug for wound healing. Farmer/ local healer/Vaidu and local informants promised to collect leaves of plant for future use
on their livestock during scarcity of medicine. Leaves powder was best remedy for wound healing. Herbal medicine was available in free of cost, convenient for application. Wound healing took place within 4 to 6 days which saved time and money.

Literature

Human use- Leaves – wound and bruises – 74
ANTHRA 2008- Plants used in Animal care.
Leaf- Anthelmintic and conjunctivitis, Catarrh and eye diseases.- Sr. No. 232- p.38

*Pogostemon benghalensis* (Burm.f.) O. Ktze.

This is wild plant available throughout the year and grows in open forest area and along the road side. (Plate V-1.3) (Table V.3)

Disease – Wound healing

No. of treatment days – 5 days

Types of species / animals – Large ruminants – Cow, Buffalo, Bull.

No. of animals under treatments - 4

Plant parts used - Leaves

Types of wound – Simple, Septic.

Stages of wound healing – Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves were collected, shade dried for 8 to 10 days then ground in grinder and made into fine powder. This powder was filled in clean plastic jar kept at cool and dry place and used as wound healing medicine for animals. The leaves powder was used by farmers, local healers and informants.

Age factor – As younger animals wound healing take place earlier than older animals.

Age – 3.5 to 7 year, average age - 5 years.

**Results:**

Rate of failure - Nil

Rate of Success - 100%
Farmer’s experience – There was no side effect to animals. *Pogostemon* was best herbal drug for wound healing of livestock. Herbal medicine was convenient for application as it was effective in drying and healing wound within 5 days. Farmers saved their time and avoid use of costly allopathic medicine. Due to validation experience farmers and local informants were ready to collect plant for preparation of medicine and its application on their animals.

Literature search

Human use- fresh leaves – Styptic, clean wound. -198.

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use: Pune- Bloat (Leaves), Diarrhoea (Leaves), Rhumatisum –(Leaves)

Ratnagiri – Infestation by fleas (Leaves)- 337.

ANTHRA 2008- Plants used in Animal care.

Diarrhoea (Whole plant), wound (Whole plant) Sr. No. 591, pp. 83


*Gnidia glauca* (Fresen.) Gilg.

This is wild plant available in open forest area and along the roadside. (Table V.4)

Disease – Wound healing

No. of treatment days –4 days

Types of species /animals –Large ruminants –Cow, Buffalo, Bull.

No. of animals under treatments - 2

Plant parts used - Leaves

Types of wound –Simple, Septic wound

Stages of wound healing –Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves were collected, shade dried for 4 days then ground in grinder and made into fine powder. This powder was filled in clean plastic jar kept at cool and dry place and used as wound healing medicine for animals. The leaves powder was used by farmers, local healers and informants.

No. of animals used for treatment -2

Age factor –Younger animals wound healing take place earlier than older animals.
Age -7 to 9 year, average age - 8 years.

**Results** :

Rate of failure -Nil

Rate of Success -100%

Farmers remarks – There was no side effect to animals although Rametha leaves supposed to be irritating. In this validation, powder was best herbal drug for wound healing as well as control wound maggots. Farmer, local healer, vaidu, local informants can use plant material for wound healing application on their own animals. Wound healing take place within 4 days hence farmers interested in this herbal drug can save their time and money.

Literature search

Human use- Stem- anti-viral activity, bark- fish poison, leaves - swelling -150.

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use: Pune - Maggot wound (Leaves), Fracture (Stem bark), Rhumatisum – (Leaves) - 224-225.

ANTHRA 2008- Plants used in Animal care.

**Wound maggots**

The large ruminant animals suffered from maggots, a Blue bottle fly *Calliphora vomitoria* hatched eggs in the wound and larvae of the fly known as maggots. These maggotty wounds need to be controlled in proper time before spreading in wounds. It causes enlargements of wounds by eating muscular part of wound and become profound and does not heal unless using some insecticidal chemical powders or plants having wound maggot control property. There is need to apply herbal medicines on priority basis. In present study tribals recorded some plant parts which are effective for wound maggots control like *Gnidia glauca, Annona squamosa, Momordica charantia* and *Lavendula bipinnata*. 
**Gnidia glauca (Fresen.) Gilg.**

This is wild plant available in open forest area and along the roadside (Plate V.2.4) (Table V.5)

Disease - Wound maggots

No.of days of treatment - 3 days

Types of species – Small ruminants

No. of animals treated - 2

Plant parts used – Leaves

Stages of wound maggots and wound healing – Maggots, Pain oedema, inflammation

Farmers, proliferation.

Preparation of medicine – *Gnidia* is wild plant perennial shrubs grown in forest area. Leaves were collected from forest area, shade dried for 8 to 10 days. Leaves were ground in grinder and made into fine powder and filled in clean plastic jar. This jar was kept at dry & cool place and used for maggoty wound.

Age factor – Average age - 6.5 yrs

Younger animal wound maggots killed earlier than older animals.

**Results :**

Rate of failure –Nil

Rate of success -100%

Farmer’s remark - Total treatment period was 3 days. When applied irritation was observed and it killed the maggots within 3 days. Preparation of medicine and use of powder for killing maggots was very effective. There was no side effects to the animal.

Literature search

Human use- Stem- anti-viral activity, bark- fish poison, leaves- swelling -150.

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use: Pune- Maggot wound (Leaves), Fracture (Stem bark), Rhumatisum – (Leaves) - 224-225.

ANTHRA 2008- Plants used in Animal care.
**Lavandula bipinnata** (Roth.) O. Ktze.

*Lavandula* is a seasonal weed along road side. (Plate V-2.1) (Table V.6)

Disease – Wound maggots

No. of treatment days – 3 - 4 days

Types of species / animals – Large ruminants – Cow and Buffalo.

No. of animals used for treatment - 11

Plant parts used - Leaves

Types of wound – Maggots,

Stages of wound healing – Maggots, Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of *Lavandula* plants were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. Powder was stored in clean plastic jar kept at cool and dry place and used for killing of maggots. The leaf powder of *Lavandula* was used by farmers, local healers and informants for ethno-veterinary medicine.

**Results** -

Rate of failure -Nil

Rate of Success -100%  3 out of 3

Age factor – As younger animals wound healing take place earlier than older animals

Age - 1 to 3 years, average age- 2.5 years

Farmer’s remarks – Average treatments days was 3-4 days. There was no side effect to animals. *Lavandula* leaves powder was best herbal drug for killing maggots of wound and wound healing drug. Farmer, local healer, vaidu, local informants were ready to collect plant, preparation of medicine and its application on their own animals. Leaves powder was best remedy for wound healing. Herbal medicine was available in free of cost, convenient for application. Killing of maggots within 3 days. Farmers saved their time and money.

Literature search - *Lavandula*

Human use- Antidote to snake bite (Leaves) - 150

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use: No report has been made by

ANTHRA 2008- Plants used in Animal care.

**Momordica charantia L.**

Plants is available in kitchen garden (Momordica charantia) (Plate V-2.2) (Table V.7)

Disease – Maggoty wound
No. of treatment days – 3 days
Types of species / animals – Large ruminants – Cow, Buffalo, Bull.
No. of animals under treatments - 10
Plant parts used - Leaves

Stages of wound healing – Pain, full of maggots, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of both plants were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. Powder was filled in clean plastic jar kept at cool and dry place and used for maggots killing and wound healing of livestock. The leaf powder was used by farmers, local healers and informants.

Types of wound – Simple, Septic, Maggots.

Age factor – As younger animals wound healing took place earlier than older animals.
Age - 3.5 to 7 year, average age - 5 years.

**Results :**

Rate of failure - Nil
Rate of Success - 100%  4 out of 4

Farmer’s remarks – Average treatments days required for killing maggots took place within 3 days. *Momordica* leaves were best herbal drug for killing maggots of livestock. Leaves powder of *Momordica* was best remedy for killing maggots. After validation in their farm, farmer / local healer / Vaidu / local informants were ready to collect plant for its application. Herbal medicine was available in free of cost and convenient for application.

Literature search

Human use - Wound, Anthelmentic (leaves and fruits) -168.
Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.
Veterinary use: Pune- Maggot wound (Leaves),
Ratnagiri- Galactagogue –(Leaves)

Vishakapatnam- Maggot wound (Leaves) -290.

ANTHRA 2008- Plants used in Animal care.

Skin diseases (Leaf), Ulcer -(Root) - Sr.No. 509 pp. 73.


**Annona squamosa** L.

*Annona* is perennial cultivated plant grown in kitchen garden. (Plate V-2.3) (Table V.8)

Disease – Wound maggots

No. of treatment days – 3-4 days

Types of species /animals – Large ruminants – Cow, buffalo, bull, dog

No. of animals under treatment - 15

Plant parts used -Leaves

Types of wound – Maggots, Simple, Septic

Stages of wound healing – Maggots, Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of plants were collected, shade dried for 8 to 10 days for fine powder preparation. Powder was stored in clean plastic jar kept at cool and dry place and was used as wound healing and killing of maggots. The leaves powder of both plants was used by farmers, local healers and informants as ethno-veterinary medicine.

**Results** -

Rate of failure -Nil

Rate of Success -100%

Age factor – As younger animals wound healing take place earlier than older animals.

Age -3 to 7 years, average age-5 years

Farmer’s remarks – *Annona* leaves was best herbal drug for killing maggots of wound within 3 to 4 days. Herbal medicine was available in free of cost, convenient for application. Farmers saved their time and money.

Literature search: *Annona*. 

138
**Momordica charantia L. + Colebrookea oppositifolia J. E. Smith**

Plants are available in kitchen garden (*Momordica charantia*) and *Colebrookea oppositifolia* wild respectively. (Table V.9)

Disease – Maggoty wound and wound healing

No. of treatment days – 6-7 days

Types of species /animals – Large ruminants – Cow, Buffalo, Bull.

No. of animals under treatment - 4

Plant parts used - Leaves.

Stages of wound healing – Pain, full of maggots, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of both plants were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. Powder was filled in clean plastic jar kept at cool and dry place and used for maggots killing and wound healing of livestock. The leaf powder was used by farmers, local healers and informants.

Types of wound – Simple, Septic, Maggots.

Age factor – As younger animals wound healing took place earlier than older animals.

Age -3.5 to 7 year, average age - 5 years

**Results:**

Rate of failure - Nil

Rate of Success - 100% 4 out of 4

Farmer’s remarks – Average treatments days required for killing maggots and healing of wound was total 6-7 days. Killing maggots took place within 3 days and wound healing took place within 4 days. *Momordica* and *Colebrookea* leaves were best herbal drug for killing maggots and wound healing of livestock. Leaves powder of *Momordica* was best remedy for killing maggots and *Colebrookea* was best wound healing property. After validation in their farm, farmer / local healer / Vaidu / local informants were ready to collect plant for its application. Herbal medicine was available in free of cost and convenient for application.

Literature search

Human use-Wound, Anthelmentic (leaves and fruits) -168.

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.
Veterinary use: Pune- Maggot wound (Leaves),

Ratnagiri - Galactagogue – (Leaves)

Vishakapattanam - Maggot wound (Leaves) -290.

ANTHRA 2008- Plants used in Animal care.

Skin diseases (Leaf), Ulcer – (Root) - Sr.No. 509 pp. 73.


Annona squamosa L. + Gnidia glauca (Fresen.) Gilg.

Annona is perennial cultivated plant grown in kitchen garden. Gnidia is wild perennial shrub found in open forest area. (Table V.10)

Disease – Wound maggots & Wound healing

No. of treatment days – 6 days

Types of species /animals –Large ruminants – Cow

No. of animals under treatment - 1

Plant parts used -Leaves

Types of wound – Maggots, Simple, Septic.

Stages of wound healing – Maggots, Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of both plants were collected, shade dried for 8 to 10 days for fine powder preparation. Powder was stored in clean plastic jar kept at cool and dry place and was used as wound healing and killing of maggots. The leaves powder of both plants was used by farmers, local healers and informants as ethno-veterinary medicine.

Results -

Rate of failure -Nil

Rate of Success -100%

Age factor – As younger animals wound healing take place earlier than older animals.

Age -3 to 7 years, average age-5 years

Farmer’s remarks – Average treatment was given for 6 days. Annona leaves was best herbal drug for killing maggots of wound. Gnidia was used also for wound healing. Leaf powder of both the plants were best remedy for wound maggots and wound healing took place within 6 days. Herbal medicine was available in free of cost,
convenient for application. Farmers saved their time and money.

Literature search

*Annona* and *Gnidea* has already mentioned.

*Lavandula bipinnata* (Roth.) O. Ktze. + *Tridax procumbens* L.

*Lavandula* is seasonal herb grown in open and roadside area. It is mostly abundant in eastern side of Bhor region.

*Tridax* is seasonal weed grown in open and roadside plant mostly abundant in eastern side of Bhor taluka. (Table V..11)

Disease – Wound maggots & Wound healing

No. of treatment days - 7 days

Types of species / animals – Large ruminants – Cow

No. of animals under treatment - 1

Plant parts used - Leaves

Types of wound – Maggots, Simple, Septic.

Stages of wound healing – Maggots, Painoedema, inflammation, proliferation.

Preparation of medicine – Leaves of both plants were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. Powder of both plants was stored in clean separate plastic jar kept at cool and dry place and used as wound healing and killing of maggots. The leaf powder of both plants was used by farmers, local healers and informants for ethno-veterinary medicine.

**Results** -

Rate of failure - Nil

Rate of Success - 100%  1 out of 1

Age factor- As younger animals wound healing take place earlier than older animals.

Age - 3 to 7 years, average age- 5 years

Farmer’s remarks – Average treatments days was 7 days. There was no side effect to animals. *Lavandula* leaves powder was best herbal drug for killing maggots of wound. *Tridax* was used as best wound healing drug. Farmer, local healer, vaidu, local informants promised to collect plant, preparation of medicine and its application on their own animals. Leaves powder of *Lavandula* killed maggots within 3 days, while
Tridax powder dried and healed wounds within 4 days. Herbal medicine was available free of cost, convenient for application. Farmers saved their time and money.

Literature search - Lavandula

Human use- Antidote to snake bite (Leaves)-150

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use: No report has been made by ANTHRA 2008- Plants used in Animal care.


Lavandula bipinnata (Roth.) O. Ktze. + Colebrookea oppositifolia J.E.Smith.

Lavandula is annual herb grown in open roadside area. Colebrookea is wild perennial medium sized shrub growing in open forest area.(Table V.12)

Disease – Wound maggots & Wound healing

No. of treatment days – 6 days

Types of species /animals –Large ruminants – Cow, Buffalo, Bull

No. of animals under treatment – 4

Plant parts used -Leaves

Types of wound – Maggots, Simple, Septic.

Stages of wound healing – Maggots, Painoedema, inflammation, proliferation.

Preparation of medicine – Leaves of both plants were collected, shade dried for 8 to 10 days then grind in grinder and made into fine powder. Powders were stored in clean two separate plastic jar kept at cool and dry place.

Results -

Rate of failure - Nil

Rate of Success - 100% 4 out of 4

Age factor – As younger animals wound healing take place earlier than older animals.

Age -1 month to 8 years, average age - 4 years 15 days.

Farmer’s remarks – Average treatment was 6 days. There was no side effect to animals. Lavandula leaf powder was best herbal drug for killing maggots of wound within 3 days. Leaf powder was best remedy for wound healing. Herbal medicine was available in free
of cost, convenient for application. Wound healing took place within 3 days. Farmers saved their time and money.

Literature search

*Lavendula* and *Colebrookea* has already mentioned.

*Lavandula bipinnata* (Roth.) O.Ktze. + *Pogostemon benghalensis* (Burm.f.) O. Ktze.

*Lavandula* is annual weed plant grown in open road side area. *Pogostemon* is wild perennial medium sized shrub growing in open forest area. (Table V.13)

Disease – Wound maggots & Wound healing.

No. of treatment days – 6 days

Types of species /animals – Large ruminants – Cow

No. of animals under treatment – 2

Plant parts used – Leaves of both plants

Types of wound – Maggots, Simple, Septic

Stages of wound healing – Maggots, Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of both plants were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. Powder was stored in clean plastic jar kept at cool and dry place and used as wound healing and killing of maggots. The leaf powder of both plants was used by farmers, local healers and informants for ethno-veterinary medicine.

**Results** -

Rate of failure - Nil

Rate of Success - 100% 2 out of 2

Age factor – As younger animals wound healing take place earlier than older animals.

Age - 5 years, average age-5 years

Farmers remarks – Average treatment was 6 days. There was no side effect to animals. *Lavandula* leaves was best herbal drug for killing maggots of wound, *Pogostemon* was used as wound healing drug. Farmer, local healer, vaidu, local informants promised to collect plant, prepare medicine and its application on their own animals. Leaf powder was best remedy for wound healing. Herbal medicine was available in free of cost, convenient for application. Wound healing took place within 3 days killing of maggots.
was done with in 3 days. Farmers saved their time and money.

Literature search

*Lavendula* and *Pogostemon* has recorded earlier.

*Lavandula bipinnata* (Roth.) O. Ktze + *Lavandula bipinnata* (Roth.) O. Ktze

*Lavandula* is annual weed plant grown in open road side area. (Table V.14)

Disease – Wound maggots & Wound healing.

No. of treatment days – 6 days

Types of species /animals – Large ruminants – Cow

No. of animals under treatment – 3

Plant parts used – Leaves of both plants

Types of wound – Maggots, Simple, Septic.

Stages of wound healing – Maggots, Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of plants were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. This powder was stored in clean plastic jar kept at cool and dry place and used as wound healing and killing of maggots. The leaf powder of plant was used by farmers, local healers and informants for ethno-veterinary medicine.

**Results** -

Rate of failure - Nil

Rate of Success - 100%

Age factor – As younger animals wound healing take place earlier than older animals.

Age - 1-3 years.

Farmer’s remarks – Average treatments was 6 days. There was no side effect to animals. *Lavandula* leaves was best herbal drug for killing maggots of wound. Farmer, local healer, vaidu, local informants promised to collect plant, preparation of medicine and its application on their own animals. Leaf powder is best remedy for wound healing. Herbal medicine is available in free of cost, convenient for application. Wound healing took place within 3 days killing of maggots was done within 3 days. Farmers saved their time and money.
Literature search

*Lavandula* has recorded earlier.

**Momordica charantia L. + Pogostemon benghalensis (Burm.f.) O.Ktze.**

Both the plants *Momordica* & *Pogostemon* are available in kitchen garden and open forested area as well as weed on roadside. (Table V.15)

Disease – wound maggots and wound healing.

No. of treatment days – 6 days

Types of species /animals –Large ruminants –Cow, Buffalo, Bull.

No. of animals under treatment – 3

Plant parts used – Leaves of *Momordica* & *Pogostemon.*

Types of wound –Maggots in wound Simple & Septic wound.

Stages of wound healing–Maggots in wound, Painoedema, inflammation,proliferation.

Preparation of medicine – Leaves were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. Powders was filled in clean plastic jars kept at cool and dry place and used as wound healing medicine for animals. The leaf powder was used by farmers, local healers and informants.

Age factor–As younger animals wound healing took place earlier than older animals.

Age -2 to 7 years.

Results :

Rate of failure -Nil

Rate of Success -100% – 5 out of 5

Farmer’s remarks – Average treatment was 6 days. Killing of maggots took place within 3 days and wound healing took place within 3 days. *Momordica* leaves was best herbal drug for killing maggots and *Pogostemon* was best wound healing herbal drug of animals. Farmer, local healer, vaidu, local informants were interested to collect plant material for preparation of medicine and its application on their own animals. Herbal medicine was available free of cost, convenient for application.

Literature search

Human use - Wound, Anthelmentic (leaves and fruits) - 168, fresh leaves – Styptic, clean wound. -198.
Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use:

Pune - Maggot wound (Leaves), Bloat (Leaves), Diarrhoea (Leaves), Rhumatisum – (Leaves)

Ratnagiri – Infestation by fleas (Leaves), Galactagogue – (Leaves) - 337.

Vishakapattanum - Maggot wound (Leaves) - 290.

ANTHRA 2008- Plants used in Animal care.

Skin diseases (Leaf), Ulcer –(Root)- Sr.No. 509 pp. 73.

Diarrhoea (Whole plant), wound (Whole plant) Sr. No. 591, pp. 83


Annona squamosa L. + Annona squamosa L.

Annona is perennial cultivated plant grown in kitchen garden. (Table V.16)

Disease–Wound maggots and wound healing.

No. of treatment days – 6 days

Types of species / animals – Large ruminants – buffalo

No. of animals under treatment - 1

Plant parts used -Leaves

Types of wound – Maggots, Simple, Septic

Stages of wound healing – Maggots, Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of plants were collected, shade dried for 8 to 10 days for fine powder preparation. Powder was stored in clean plastic jar kept at cool and dry place and used as wound healing and killing of maggots. The leaves powder of both plants was used by farmers, local healers and informants as ethno-veterinary medicine.

Results -

Rate of failure -Nil

Rate of Success -100%

Age - 5 years.

Farmers remarks – Annona leaves was best herbal drug for killing maggots and wound healing within 3 + 3 = 6 days. Herbal medicine was available in free of cost, convenient
for application. Farmers saved their time and money.

Literature search: Annona.

**Annona squamosa L. + Tridax procumbens L.**

*Annona* is perennial cultivated plant grown in kitchen garden.

*Tridax procumbens* is seasonal weed available in the month of July to October. It is available abundantly in open barren and roadside area. This plant grows at eastern part of Bhor taluka. (Table V.17)

Disease – Wound maggots and wound healing.

No. of treatment days – 6 days

Types of species/animals – Large ruminants – Jersey Cow

No. of animals under treatment – 1

Plant parts used – Leaves

Types of wound – Maggots, Simple, Septic.

Stages of wound healing – Maggots, Painoedema, inflammation, proliferation.

Preparation of medicine – Leaves of plants were collected, shade dried for 8 to 10 days for fine powder preparation. Powder was stored in clean plastic jar kept at cool and dry place and used as wound healing and killing of maggots. The leaves powder of both plants was used by farmers, local healers and informants as ethno-veterinary medicine.

**Results** -

Rate of failure - Nil

Rate of Success - 100%

Age factor – As younger animals wound healing take place earlier than older animals.

Age - 3.5

Farmer’s remarks – *Annona* leaves was best herbal drug for killing maggots and *Tridax* leaf powder for wound healing within $3 + 3 = 6$ days. Herbal medicine was available free of cost, convenient for application. Farmers saved their time and money.

Literature search

*Annona* and *Tridax.*
**Annona squamosa** L. + **Colebrookea oppositifolia** J. E. Smith

Plants parts are available from kitchen garden and wild throughout the year. Annona is cultivated kitchen garden and **Colebrookea** available in open forest area. (Table V.18)

Disease – Wound maggots, Wound healing

No. of treatment days – 6 days

Types of species / animals – Large ruminants – Cow, Buffalo, Bull

No. of animals under treatment - 3

Plant parts used – Leaves of both plants

Types of wound – Maggots, Simple, Septic

Stages of wound healing – Maggots, Pain, oedema, inflammation, proliferation

Preparation of medicine – Leaves of both plants were shade dried for 8 to 10 days then grind in grinder and made into fine powder. Powder was stored in clean plastic jar and kept at cool and dry place and used for killing maggots and wound healing. The leaves powder was used by farmers, local healers and informants.

**Results** -

Rate of failure - Nil

Rate of Success - 100%

Age factor – As younger animals wound healing take place earlier than older animals.

Age -1.5 to 9.5 years, average age – 5.5 years

Farmers remark – Average treatment was 6 days. Maggots killed within 3 days and wound healing took place within 3 days. There was no side effect to animals and it saved time and money. **Colebrookea** leaves was best herbal drug for wound healing. Farmer, local healer, vaidu, local informants would readily use the same medicines for future application on their own livestock. Herbal medicine was available in surrounding forest free of cost and was convenient for application.

Literature search

**Annona squamosa** L.

Human use- Anti-bacterial (Leaves)- 8

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.
Veterinary use:

East Godavari – wound- (Leaves), Foot and mouth disease – (Leaves) Foot rot - leaves and stem bark.

Pune- Maggot wound (Leaves)

Vishakapattanum- Foot rot (Leaves), Maggot wound (Leaves) -41-42.

ANTHRA 2008- Plants used in Animal care.

Wound (Leaf), Eco-parasite (leaf), Insecticide – (Leaves), Cut- (Leaf)- Sr. No. 633  pp. 17-18.


*Annona squamosa* L + *Pogostemon benghalensis* (Burm.f.) O. Ktze.

Annona is cultivated perennial plant grown in kitchen gardens and leaves are available throughout years. *Pogostemon* is wild plant grown in forest area.(Table V.19)

Disease – Wound maggot and Wound healing

No. of treatment days – 6 days

Types of species /animals –Large ruminants – Cow, Buffalo, Bull

No. of animals under treatment - 4

Plant parts used – Leaves of both plants.

Types of wound – Maggot, Simple, Septic

Stages of wound healing – Maggots, Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of both plants were collected and shade dried for 8 to 10 days for fine powder. Powder was stored in clean plastic jar and was kept in cool and dry place and was used for killing maggots and wound healing. The leaves powder was used by farmers, local healers and informants.

**Result -**

Rate of failure - Nil

Rate of Success - 100% 4 out of 4

Age factor – As younger animals wound healing take place earlier than older animals.
Age -2 to 8 years, average age-5 years

Farmers remarks –Average treatment was 6 days. Killing maggots took place within 3 days and wound healing took place within next 3 days. There was no side effect on livestock. *Annona* leaves powder was best herbal drug for killing maggots and *Pogostemon* powder was best remedy for wound healing. Farmer, local healer, *Vaidu* and local informants were ready to prepare herbal medicine and its application on their community. Herbal medicine was available in free of cost, convenient for application. Farmers saved their time and money.

Literature search

*Annona* and *Pogostemon* has already mentioned.

**Momordica charantia** L. + *Azadirachta indica* A. Juss. + *Tridax procumbens* L.

Plants are available in kitchen garden (*Momordica charantia*), Trees of *Azadirachtra indica* in eastern part of Bhor region and *Tridax procumbens* is weed available in the month of July to October. It is available abundantly in open barren and roadside area in marshy areas. (Plate V-1.1) (Table V.20)

Disease –Curing wound maggots and healing wound.

No. of treatment days – 6 days

Types of species /animals –Large ruminants –Cow ,Buffalo ,Bull

No. of animals under treatment – 2

Plant parts used –Leaves of *Momordica, Azadirchta* ,*Tridax*

Types of wound –Simple, Septic

Stages of wound healing–Maggots in wound, Painoedema, inflammation, proliferation

Preparation of medicine –Three plants leaves were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. Powder was filled in clean plastic jars, kept at cool and dry place and was used for wound maggots and wound healing purpose. Leaf powder was used by farmers, local healers and informants.

Age factor–As younger animals wound healing take place earlier than older animals.

Age -8 to 9 year, average age-8 .5 years

**Results:**

Rate of failure -Nil
Rate of Success -100%

Farmer’s remarks – Average treatment was for about 6 days. *Momordica* leaves powder and *Azadirchta* and *Tridax* leaves was best for herbal drug for killing maggots and wound healing of animals. Farmers, local healer, vaidu, local informants were ready to collect plant parts after validation. In future they shall prepare medicine and apply to their livestock. Leaves powder was best remedy for killing maggots and wound healing. Herbal medicines was available in free of cost and convenient for application. Wound healing took place within 3 days, after killing maggots.

Farmers saved their time and money. There is no side effect to animals.

Literature search.

*Azadirachta indica* A.Juss.

Human use- Anti-bacterial (Leaves)- 8

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use:

East Godavari – Maggot wound- Seed oil, wound- (Leaves)
Latur- Maggot wound- (Leaves), Wound- (leaves)
Ratnagiri – Maggot wound (seed oil) wound- (Dried leaves)
Vishakapattanum- Maggot wound ( Leaves) -60-61 .

ANTHRA 2008- Plants used in Animal care.

Cut (Leaf), Insect repellent – (Leaves), Skin- (Leaf)- Sr.No. 93  pp. 22.


*Annona squamosa* L. + *Azadirchta indica* A. Juss. + *Tridax procumbens* L.

*Annona* is perennial plant grown in kitchen garden. *Azadirchta* is wild perennial tree grown in open and roadside area. *Tridax* is seasonal weed grown in open and waste land area. (Table V.21)

Disease – Wound maggots and Wound healing

No. of treatment days – 6 days

Types of species /animals –Large ruminants – Cow, Buffalo, Bull.
No. of animals under treatment - 4

Plant parts used – Leaves of 3 plants

Types of wound – Maggots, Simple, Septic.

Stages of wound healing – Pain, oedema, inflammation, proliferation.

Preparation of medicine – Leaves of above three plant species were collected and dried in shade for 8 to 10 days for fine powder. These three powders were stored in clean plastic jars, kept at cool and dry place and was used for wound healing and killing the maggots.

Results -

Rate of failure - Nil

Rate of Success - 100%

Age factor – As younger animals wound healing take place earlier than older animals.

Age - 15 days to 6 years, average age - 3 years

Farmer’s remarks – Average treatment duration was for 6 days. Annona leaves was best herbal drug for killing maggots in wound. Azadirachta and Tridax leaves powder were used as a best remedy for wound drying and healing. Annona powder killed maggots within 3 days. Combination of two powders benefited to dry and heal the wound within 3 days. Leaf powder was best remedy for wound healing and killing of maggots. Herbal medicine was available in free of cost, convenient for application. Farmers saved their time and money.

Literature search: Annona, Azadirachta and Tridax has already given.
Plant resources used to control dysentery and diarrhoea

*Woodfordia fruticosa* (L.) Kurz

Woodfodia is perennial wild medium sized shrub found in open forest area. (Plate V-3.3) (Table V.22)

Disease – Dysentery and diarrhoea

Symptoms – Liquid watery slurry with mucus and blood, Bad odour.

No. of treatment days – 2 days

Types of species /animals – Large ruminants – Cow, Buffalow, Bull

No. of animals under treatment – 11

Plant parts used – Leaves and flowers

No. of control days - 2 days.

Preparation of medicine – Leaves and flowers of *Woodfodia* were collected, shade dried for 8 to 10 days then grind in grinder and made into fine powder. Powder was used by farmers, local healers and informants for control of dysentery and diarrhoea in ethno-veterinary medicine. They used dose of 30 gram depending on age factor of animal.

**Results** -

Rate of failure - Nil

Rate of Success - 100%

Age - 3 to 5 years, average age-4years

Farmer’s remarks – Average treatment days was 2. *Woodfodia* leaf and flower powder was best herbal drug for controlling dysentery and diarrhoea. Farmer, local healer, *Vaidu* and local informants would like to practice the same remedy in future by preparation of the medicine. Herbal medicine was available in free of cost and is also convenient for application. Complete control of dysentery and diarrhoea take place within 2 days. Farmers saved their time and money and there was no side effect on cattles.

Literature search:

Human use- Dysentery (Flower)- 259.

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use:
East Godavari- Diarrhoea (Fruit)

Medak- Diarrhoea (leaves)

Pune- Bloat (Leaves)

Ratnagari- Diarrhoea (Leaves)- 421-422.

ANTHRA 2008- Plants used in Animal care.

Sore- (Leaf), Ulcer- (Leaf), Foot root (Leaf), Wound- (Fruit)- Sr. No. 775, pp.106-109.


*Aegle marmelos* (L.) Corr.

*Aegle* is perennial tall shrub or tree, grown as sacred plant near Lord Shiva temple or found in wild. (Plate V-3.2). (Table V.23)

Disease – Dysentery and diarrhoea.

Symptoms – Liquid watery slurry with mucilage and blood, Bad odour.

No. of treatment days – 2 days

Types of species /animals – Large ruminants – Cow, Bull, Buffalo

No. of animals used for treatment – 11

Plant parts used – Fruit.

Preparation of medicine – Fruits of *Aegle* were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. This powder was stored in clean plastic jar kept at cool and dry place. The fruit powder of *Aegle* was used by farmers, local healers and informants for ethno-veterinary medicine for controlling dysentery and diarrhoea. They used dose of 30 gram depending on age factor of animal.

**Results** -

Rate of failure – 9.10%

Rate of Success - 90.90 % 11out of 10

Age - years, average age - 5 years

Farmer’s remarks – Average treatment took place within 2 days. There was no side effect to animals. *Aegle* was best herbal drug for dysentery and diarrhoea. Farmer, local healer, vaidu and local informants were ready to use herbal medicine to their own cattle. Fruit powder was best remedy for controlling dysentery and diarrhoea. The use of herbal medicine needs to be used at initial stage which can control pathogens.
Late use will create problem for controlling dysentery. It was available in free of cost and convenient for application.

Literature search: *Aegle*

Human use - Dysentery and Diarrhoea (Fruit and stem bark), Astringent - Unripe fruit, Cooling laxative – Fruit pulp - 8

Chopra, RN, Nayer, SL and Chopra, IC. (1956) Glossary of Indian Medicinal Plants.

Veterinary use:

East Godavari- Bloody diarrhoea (Fruit and stem bark)

Latur- Diarrhoea (Leaves), Maggot wound (Leaves and fruits)

Ratnagiri- Foot and mouth diseases (Leaves)-16-17.

ANTHRA 2008- Plants used in Animal care.

Injury- Fruit, Joint pain- Fruit, Diarrhoea- fruit, fever- leaf, wound-leaf.


*Mentha spicata L.*

Mentha is cultivated herb in kitchen garden of herbalists. (Plate V-3.1) (Table V.24).

Disease – Dysentery and diarrhoea

Symptoms – Liquid watery slurry with mucilage and blood, Bad odour.

No. of treatment days -2 days

Types of species /animals – Large ruminants – Cow,Buffalo,Bull

No. of animals under treatment -8

Plant parts used -Leaves

Preparation of medicine – *Mentha* leaves were collected, shade dried for 8 to 10 days then grind in grinder and made into fine powder. Powder was stored in clean plastic jar, kept at cool and dry place. They used dose of 30 gram depending on age factor of animal. The leaf powder was used by farmers, local healers and informants for ethno-veterinary medicine to controlled dysentery & diarrhoea.
Results -

Rate of failure –11.12%
Rate of Success -88.88%

Age -16 days to 8 years, average age - 4 years.

Farmer’s remarks – Average treatment was 2 days. There was no side effect to Cattles. Mentha leaves were best herbal drug for controlling dysentery and diarrhoea. Farmer, local healer, vaidu and local informants were ready to use dry powder in scarcity of plant. Herbal medicine was available in free of cost and convenient for use. Farmers saved their time and money.

Literature search: Mentha Spicata

Human use- Bronchitis- Leaves, Fever- leaves- 165.


Veterinary use: No report has been made by

ANTHRA 2008- Plants used in Animal care.

Removal placenta- (Leaf), Removing lice- (Leaf), Repel exparasite- (Leaf) Sr. No. 499,pp.70


Combination of plants used to treat dysentery and diarrhoea.

Woodfordia fruticosa (L.) Kurz and Mentha spicata L.

Woodfordia is perennial wild medium sized shrub found in open forest area.

Mentha is cultivated herb in kitchen garden of herbalists. (Table V.25)

Disease–Dysentery and diarrhoea

Symptoms – Liquid watery slurry with mucus and blood, bad odour.

No. of treatment days – 2 days

Types of species /animals –Large ruminants – Cow, Buffaloes, Bull

No. of animals under treatment – 2

Plant parts used –Leaves and flowers
No. of control days -2 days

Preparation of medicine – Leaves and flowers of Woodfordia and Mentha was collected, shade dried for 8 to 10 days then grind in grinder and made into fine powder. The leaf powders are used by farmers, local healers and informants for control of dysentery and diarrhoea in ethno-veterinary medicine. They used dose of 30 gram depending on age factor of animal.

Results -

Rate of failure -Nil
Rate of Success -50%
Age -4 to 8 years

Farmer’s remarks – Average treatments took place in 2 days. Woodfordia flower powder and Mentha leaf powder are best herbal drug for controlling dysentery and diarrhoea. Farmer, local healer, Vaidu and local informants would like to practice same remedy in future by preparation of medicine. Herbal medicine was available in free of cost, convenient for application. Complete control of dysentery and diarrhoea took place within 2 days. Farmers saved their time and money. There was no side effect on cattles.

*Aegle marmelos* (L.) Corr. and *Woodfordia fruticosa* (L.) Kurz.

*Aegle* is perennial tall shrub or tree, grown as sacred plant near Lord Shiva temple or found in wild.

Woodfordia is perennial wild medium sized shrub found in open forest area.

(Table V.26)

Disease – Dysentery and diarrhoea.

Symptoms – Liquid watery slurry with mucilage and blood, Bad odour.

No. of treatment days – 2 days

Types of species /animals –Large ruminants – Cow, Bull, Buffalo.

No. of animals under treatment – 1

Plant parts used – Fruit

Preparation of medicine – Fruits of Aegle and flowers of Woodfordia were collected, shade dried for 8 to 10 days then grinded in grinder and made into fine powder. This powder was stored in clean plastic jar kept at cool and dry place. The fruit powder of Aegle was used by farmers, local healers and informants for ethno-veterinary medicine.
for controlling dysentery and diarrhoea. They use dose of 30 gram depending on age factor of animal.

**Results**

Rate of failure –100 %
Rate of Success - 0 %
Age - 1.5 years.

Farmer’s remarks -Average treatment was 2 days. There was no side effect to animals. *Aegle* and *Woodfordia* were best herbal drug for dysentery & diarrhoea. Farmer, local healer, vaidu and local informants were ready to use herbal medicine for their own cattle. Fruit powder was best remedy for controlling dysentery and diarrhoea. The use of herbal medicine needs to be used at initial stage which can control pathogens. Late treatment created problem for controlling dysentery in H.F. calf having age 1.6 years.

**Results and Discussion.**


Single plants powders are used for initial stage for wound healing like *Tridax procumbens* L., *Colebrookea oppositifolia* J.E. Smith, *Pogostemon benghalensis* (Burm.f.) O. KTze and *Gnidia glauca* (Fresen.) Gilg. The results of wound healing was 100% successful.

Leaf powder of *Tridax procumbens* L. applied to 16 animals wounds, out of which 6 buffalos, 6 bulls, one young bull of age 4.5 year, one jersey cow, deshi cow one and one H.F. cow were treated having age group 10 to 4 years.
Nine female and seven male animals were responsive to herbal medicines. Wound healing or formation of proliferation on wound is observed. It is observed that skin of each animal is varying in thickness, behaviour of animal also affects healing process and requires 4-5 days.

Leaf powder of Colebrookea oppositifolia J.E.Smith applied on five animals two jersey cow and 3 buffalos having age group of 3-7 years. The wounds of animals are cured within 4-6 days.

Pogostemon benghalensis (Burm.f.) O. Ktze leaf powder was applied on wound of 4 animals, 3 buffalo and one jersey cow having 6-7 years age groups. Wounds are healed in five days.

Gnidia glauca (Fresen.) Gilg. Leaf powder along with oil was applied on two animals one jersey cow and one jersey calf having age of 4 to 6.5 years. Both animals wound are cured in 4 days.

The large or small ruminants generally suffered with maggots (scientifically known as blue bottle fly - Calliphora vomitoria). The blue bottle fly thatched eggs in the wound and larvae of the fly known as maggots. If maggots were not controlled in proper time, wound size is enlarged by eating muscular portion of the skin. In this case some leaf powers were effective in controlling maggots. Treatments given for control maggots of few plants like Gnidia glauca (Fresen.) Gilg, Annona squamosa, Momordica charantia and Lavandula bipinnata. The results of application of single plant powder and combination are very effective.

Gnidia glauca (Fresen.) Gilg leaf powder used on two animals, one is buffalo calf and one jersey calf, having age group 21 to 30 days. Wound maggots are controlled with in 3 days.

Lavandula bipinnata (Roth.) O. Ktze – leaf powder is tested on 11 animals. Out of which 3 jersey cow, four buffalo, two he-sheep and one bull and jersey calf. Bull is 8 years old, buffalos are 3 to 7.5 years old, 3 jersey cow are 3-5 years old, he-sheep one year old and jersey calf one month. Wound maggots are controlled within 3-4 days. One hesheep treated for wound maggots and wound healing takes place within 4 days.

Annona squamosa – Leaf powder was applied on 15 animals, 4 jersey cow, 3 buffalo, 2 bull, 4 jersey calf, one young bull and one dog. Dog required 4 days for controlling maggots. All other animals (large ruminants) controlled maggots with in 3-4 days.
Momordica charantia L. Leaf power tested on 10 animals, out of which 4 buffaloes, 4 jersey cow, one jersey calf and one buffalo calf. The age of calf 15 days and remaining animals are of 4-8 years. Control of maggots takes place with in 3 days.

After observing the results of single plants for wound maggots and wound healing. A special attention is given for combination of two to three plant parts for total healing of wound.

Annona squamosa L and Colebrookea oppositifolia J.E.Smith - First part of treatment is to control maggots with leaf powder of Annona and second part is healing of wound with application of Colebrookea oppositifolia J.E.Smith leaf powder. Total treated cases of 3 animals, out of which two buffaloes and one dog. Total 6 days are required, out of which Maggots are controlled with in 3 days and wound healing required 3 days.

Annona squamosa L and Pogostemon benghalensis (Burm.f.) O. Ktze- Total 4 animals treated with two leaf powders separately. One bull, two jersey cow and one jersey calf. The wound maggots are controlled and healing of wound taken place with in 6 days.

Annona squamosa L and Annona squamosa L – Leaf powder of same plant applied for both purpose. One animal buffalo having age five years treated for wound maggots 3 days and wound healing 3 days.

Annona squamosa L and Tridax procumbens L. One Jersey cow having age 3.5 treated for wound maggots control 3 days and wound healing 3 days.

Annona squamosa L and Gnidia glauca (Fresen.) Gilg - One jersey cow having age 4.5 years, total 6 days are required for maggot control and wound healing.

Annona squamosa L., Azadirachta indica A. Juss and Tridax procumbens L – Four animals treated, two jersey cow, one bull and one H.F. cow. Total maggot control and wound healing required 6 days.

Momordica charantia L.and Colebrookea oppositifolia J.E. Smith-Four animals treated, 2 buffalo, one buffalo calf and one jersey cow. In these treatments total 6-7 days are required for maggot control and wound healing.

Momordica charantia L and Pogostemon benghalensis (Burm.f.) O. Ktze- Total 3 animals, one buffalo, one jersey calf and one jersey cow. The treated animals required 6 days to control maggots and wound healing.
Lavandula bipinnata (Roth.) O. Ktze and Lavandula bipinnata (Roth.) O. Ktze. Total three animals, one hesheep, one jersey cow and one buffalo. Age of animals 1 and 3 years, control of maggots and wound healing required 6 days.

Lavandula bipinnata (Roth.) O. Ktze and Tridax procumbens L- one jersey cow age of 3 years. Total 7 days required for controlling maggots and wound healing.

Lavandula bipinnata (Roth.) O. Ktze and Pogostemon benghalensis (Burm.f.) O. Ktze. Two animals, one buffalo and one jersey cow age of five years. Total 6 days required for maggot control and wound healing.

Lavandula bipinnata (Roth.) O. Ktze and Colebrookea oppositifolia J. E. Smith- Total four animals, one jersey calf, two buffalo and one bull having age of 1 month, 7-7.6 and 8 years respectively. Total wound maggot control and wound healing process required 6 days.

Diarrhoea and dysentery control in animals by giving leaf powder feeding with wheat flour. Generally single leaf powders are effective but in certain cases combination of two powder are easy to control dysentery in minimum period.

Woodfordia fruticosa (L.) Kurz.- Total 11 animals treated with leaf and flower powder, out of which 3 jersey cow, one H.F. cow, bull two, buffalo 2, jersey calf 2, buffalo calf one having age group 3-9 years. Control dysentery and diarrhoea with in 2 days.

Agele marmelos (L.) Coirr - Total 11 animals treated with fruit powder, out of which 4 jersey cow, two jersey calf, two bull, one H.F. cow, deshi cow one and buffalo one, having age group of 15 days to 8 years. Two days are required to control dysentery and diarrhoea.

Mentha spicata L – Total 8 animals were treated with leaf powder, out of which 4 jersey cow, H.F. cow two, buffalo calf one and H.F. calf one, age group of 16 days to 7.5 years. Dysentery and diarrhoea control in 7 animals and one animal not control with the herbal medicine due acute condition and late arrival for the treatment.

Woodfordia fruticosa (L.) Kurz. and Mentha spicata L – Two animals 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.

Agele marmelos (L.) Coirr and Woodfordia fruticosa (L.) Kurz.- One animal H.F. calf having age 1.6 year, treated with fruit powder and flower powder. Dysentery of animal was not controlled due to herbal treatment due to chronic dysentery.

161
Single leaf powders were used for the wound healing and wound maggot control. The results were encouraging and hence combination of two or three plant powders are used to control maggots and healing of wounds. All the results of powders are 100% effective and presently Vaidus or Bhagats were treating the animals. Farmers can generate useful information and develop livestock healing practices and methods that are suited to the local environment and from this validation farmers save their time and money.

The fruit powder of *Aegle*, Flower and leaf powder of *Woodfordia* and leaf powder of *Mentha* are showing positive response in controlling dysentery and diarrhoea. All the validation are undertaken at farmer’s field under the supervision of herbalists.

The world is gradually turning to herbal formulations which are known to be effective against a large repertoire of diseases and ailments. More importantly, they are not known to cause any notable derogatory effects (Kirtikar and Basu 1984) and are readily available at affordable prices. Prajapati et al. (2004) added a note of caution stating that plant remedies are effective and without side-effects, provided they are selected properly and taken under proper medical supervision.

Some ethno-veterinary practices are location-specific due to variation in communities and regions. Not all aspects of ethno-veterinary medicine are as easily transferable as plant medicines. Some plants are not available to the Vaidus or Bhagats in the target area. There practices are different for the same ailment which is available in the region.