This section contains details of herbal preparations used traditionally for various ailments and products based on such traditional knowledge.
PART II : HERBAL PRACTICES & PRODUCTS

Uses of Achyranthes aspera L. (Apamarg)

NIF Database

Uses from Bihar

Toothache
Teeth are brushed with freshly plucked roots
- Bhagvat Prasad Yadav, Nawada, Bihar

Itching
Powdered roots (5g) are taken orally with water twice a day for seven days
- Indira Kumari, East Champaran, Bihar

Fever
Roots (5g) are ground with half black pepper into a fine powder, which is administered orally
- Rajkishor Prasad, Shivhar, Bihar

Hemorrhoids
Dried roots are ground into a fine powder; one spoon of this taken on an empty stomach till the ailment cures
- Vishwanath Mahato, East Champaran, Bihar

Veterinary practice

Topical inflammation
Plant paste is applied externally on topical inflammation
- Sheikh Hifazat Hussain, East Champaran, Bihar

Uses from other states

Headache
Tablets (of about 5g) are prepared from the pounded roots; one tablet is taken in the morning with water for three days
- Jagjit Bahadur, Sitapur, Uttar Pradesh

Asthma
The whole plant (50-100g) is ground into a fine powder. 5g of this powder is taken with water till cured
- Ahmed Hussain, Lohardaga, Jharkhand

Poisonous bites
Root paste is applied on the spot of bite and also administered orally
- Jagjit Bahadur, Sitapur, Uttar Pradesh

Abscess
Root paste is applied on the abscess
- Ravi Uraav, Hazaribagh, Jharkhand

Uses in Classical Codified Literature

Dried aerial parts are taken orally in case of diabetes;
powder made from the dried plant given orally to treat whooping cough;
decocction of the plant used as laxative;
decocction of the plant applied externally on boils and pimples.

Product "Cystone" is made from this plant, which inhibits calculogenesis by reducing stone-forming substances like oxalic acid, calcium hydroxyproline and prevents urinary tract infections. Thirty five patents have been found on the medicinal applications of Achyranthes like for curing laryngopharyngitis, bronchial asthma etc.

Source: http://www.impgc.com/images/plantPictures/Achyranthes%20aspera.jpg
Uses of Aegle marmelos (L.) Corr. (Bel)

NIF Database

Uses from Bihar

Ulcer
Leaves of bel (100g), petals of rose (100g) and turmeric (50g) are pounded and mixed with honey (50g). Tablets are prepared from this mixture and given thrice a day for 7-10 days.
- Rameshwari Singh, Nawada, Bihar

Fever
Leaves of bel and chirayata (Andrographis paniculata (Burm.f.) Wall.ex Nees) 250g each are boiled in a litre of water to obtain a decoction of 250g. 100g decoction is given to the patient twice a day for seven days.
- Sindhoo Kumari, Gopalganj, Bihar

Jaundice
Freshly plucked green leaves are soaked in a glass of water. This water is taken on an empty stomach 2-3 times a day till the ailment cures.
- Akhilesh Kumar Yadav, East Champaran, Bihar

Diabetes
Equal quantity of leaves of bel and fruits of Indian gooseberry are taken and the juice is extracted. A teaspoon of the juice is given to combat the disease.
- Vinita Kumari, Sitamarhi, Bihar

Veterinary practice

Abdominal pain
Leaves of Aegle and Euphorbia nerifolia L., flower of Tagetes erecta L., are mixed with fodder and fed to the animal.
- Dipendra Kumar, East Champaran, Bihar

Uses from other states

Eye diseases
Juice is extracted from the green leaves and two drops are put in the eye.
- Kumari Nigar Pravin, Hazaribag, Jharkhand

Sunstroke
Juice is extracted from the fresh leaves and taken orally.
- Vijaya Bharati, Hazaribag, Jharkhand

Intestinal worms
Juice is extracted from the green leaves and taken orally.
- Jagjeet Bahadur, Sitapur, Uttar Pradesh

Diarrhoea
Pulp of the ripen fruit is taken orally.
- Jagjeet Bahadur, Sitapur, Uttar Pradesh

Uses in Classical Codified Literature

Burnt fruit pulp is applied on rheumatic arthritis; 10g fruit pulp is given before sleep to overcome morning sickness; fruit rind is applied externally on head to kill headlice.

‘Bael’, prepared from Aegle is used in diarrhoea, dysentery and GI disorders. It has digestive and carminative properties. ‘Lukol’s’ tonic is made from this plant along with other plants, which improves uterine circulation, and its antimicrobial and astringent actions on the mucous membrane of the genital system control leucorrhoea. ‘Bilwa’, a product of Aegle, is used as a medicine to cure a number of diseases. Fifty three patents have been found on the medicinal applications of Aegle like for treating diabetes, gastric ulcer etc.
Uses of *Boerhaavia diffusa* L. (Punarnava)

**NIF Database**

**Uses from Bihar**

**Jaundice**
Juice extracted from the plant is given orally for three days consecutively
- Jagnarayan Singh, Gopalganj, Bihar

**Kidney stone**
Milk boiled with the roots is taken
- Monika Kumari, Sitamarhi, Bihar

**Stomach disorder**
Juice is extracted from the plant and mixed with equal amount of cow’s urine. Two spoonful of the mixture is taken
- Monika Kumari, Sitamarhi, Bihar

**Uses from other states**

**Headache**
Leaves are ground into a fine paste and applied on the forehead
- Sukumar Nath, North Tripura, Tripura

**Conjunctivitis**
Decoction of the root (50g) is given once a day
- Ramnarayan Gameti, Udaipur, Rajasthan

**Cough**
Leaves of punarnava (5g), one small onion, a small piece of ginger and a spoonful of cardamom are cooked well and taken orally
- Hasina Khan, Margav, Goa

**Uses in Classical Codified Literature**

Juice extracted from the leaves is given with milk to get relief from cataract; decoction of the plant is given orally to purify blood; the plant extract is used as diuretic; decoction of the leaves is applied externally in case of any skin infections.

‘Liver-kidney care’ is made from this plant, which works synergistically on the liver and kidney to heal and prevent infections in both systems. Fourteen patents have been found on the various medicinal applications of *Boerhaavia* for different ailments like liver disorders, hypertension etc.
Uses of Bombax ceiba L. (Semal)

**NIF Database**

**Uses from Bihar**

**Pimples**
Paste made using thorn and milk is applied on the pimples for seven days
- Pravin Kumar Sharma, East Champaran, Bihar

**Wound**
Fresh bark is ground and the paste is applied on the infected part
- Pravin Kumar Sharma, East Champaran, Bihar

**Diarrhoea**
Juice from the leaves is extracted and a spoonful given to the patient along with sugarcandy for four days
- Neha Kumari, East Champaran, Bihar

**Veterinary practice**

**Bloat**
Fruits (100g) are mixed with an equal amount of buffalo ghee and fed to the animal twice a day
- Ramnath Thakur, East Champaran, Bihar

**Uses from other states**

**Gynaecological disorder**
Powdered gum (5g) is mixed with water and given to the patient to drink for five days
- Jugeshwar Ram, Hazaribag, Jharkhand

**Constipation**
Bark powder (3g), coriander powder and jaggery is taken with water
- Devaram, Sirohi, Rajasthan

**Piles**
Paste (10g) of roots is taken with water for seven days
- Antaryami Pradhan, Angul, Orissa

**General health**
Few flowers are soaked in a glass of water overnight and the water is taken next morning to give a coolant effect to the body
- Mukta Kumavat, Sikar, Rajasthan

**Uses in Classical Codified Literature**

Decoction of the bark is given orally to combat fever\(^\text{19}\), diabetics should take decoction of the heartwood\(^\text{20}\); and to reduce stomachache administer bark juice\(^\text{21}\).

Product ‘Acne-n-Pimple Cream’\(^\text{22}\) is prepared from Bombax along with other plants to treat pimples and skin eruptions. ‘Evecare\(^\text{4}\), a multi herb product made from this plant, has a regularizing influence on the menstrual cycle. Eight patents have been found on the medicinal applications of Bombax like for skincare\(^\text{23}\), AIDS\(^\text{24}\) etc.
**Uses of Carica papaya L. (Papita)**

**NIF Database**

**Uses from Bihar**

**Kidney stone**
Pounded roots (6g) are mixed with water (50g) and taken orally
- **Sandhya Suman, Sitamarhi, Bihar**

**Intestinal worms**
Fresh latex from a branch is taken and administered orally along with a spoonful of honey
- **Prabhat Kumar Pandey, East Champaran, Bihar**

**Ringworm**
Milky latex is applied topically
- **Mukesh Kumar, East Champaran, Bihar**

**Veterinary practice**

**Lactogouge**
Fruits are fed daily to enhance milk production
- **Manoj Kumar, Madhubani, Bihar**

**Uses from other states**

**Toothache**
Cotton dipped in the latex of the stem is kept on the aching tooth
- **Mangeram Jani, Hissar, Haryana**

**Headache**
Seeds and garlic are ground into a fine paste and applied on the forehead
- **Saiba Barman, Borpeta, Assam**

**Jaundice**
Curry made from the raw/unripe fruit is taken orally
- **Sharda Devi Gangwal, Jaipur, Rajasthan**

**Uses in Classical Codified Literature**

Decoction of the flower is used as cardiotonic; bark powder is applied externally on wounds; decoction of the bark is given orally to get rid of intestinal worms; beverage of the fruit is taken orally to cure diarrhoea.

Natural moisturisers and creams are prepared from Carica in combination with other plants. Thirty patents were found on its medicinal uses such as an antiallergic and for prevention of cancer.

Source: [http://utenti.lycos.it/piante tropica/Carica_papaya.jpg](http://utenti.lycos.it/PIANETROPICA/Carica_papaya.jpg)
Uses of *Datura metel L.* (Dhatura)

**NIF Database**

**Uses from Bihar**

**Cough**
Juice from the roasted leaves is extracted; two spoonful of the juice is mixed with a spoon of ghee and taken orally
- Mohani Kumari, Lakhisaray, Bihar

**Bodyache**
Equal quantity of leaves of dhatura, bark of neem, leaves of chirayata (*Andrographis paniculata* (Burm.f.) Wall.ex Nees), leaves of tobacco are taken and boiled in 1 litre of water till the total solution is reduced to 1/4th. Sesame oil is then mixed in it and the mixture applied on the affected part
- Lalbabu Sahni, Madhubani, Bihar

**Arthritis**
Leaves of dhatura, *Anthocephalus chinensis* (Lamk.) A.Rich.ex.Walp. (ten each) and ginger (100g) are ground together with sugar (50g), and the paste is applied on the aching body part
- Ramanand Shah, East Champaran, Bihar

**Eczema**
A fruit is roasted and ground to make a fine powder, sesame oil (250g) and milk are then added to make a paste. The paste is applied on the infected part
- Vikas Kumar, Nawada, Bihar

**Veterinary practice**

**Diarrhoea**
Roasted fruits are given with fodder
- Jawaharlal Prasad, East Champaran, Bihar

**Uses from other states**

**Alopecia**
Juice is extracted from the leaves, smeared on the head, and left for 30 minutes
- Bans Ghosal, West Midnapur, West Bengal

**Headache**
Seeds are chewed and spat for instant relief
- Ganesh Das, Sirohi, Rajasthan

**Asthma**
A seed soaked in water is taken orally initially, gradually a seed is increased every week for five weeks
- Rani Farhat, Hazaribag, Jharkhand

**Diarrhoea**
Seeds are ground with little water. The mixture is filtered and administered orally
- Ajit Singh Rathod, Nagor, Rajasthan

**Uses in Classical Codified Literature**

One fruit, filled with 10g *Piper longum* L. is burnt and 5g of the ash is taken with honey, morning and evening for 5 days to cure malaria; the thumb is kept inserted within the fruit to treat finger felon; root paste is applied externally on poisonous bites. 'Muscles & joint rub' is a highly effective medicine for backache, muscular sprain and joint pain made from the plant.
Uses of *Eclipta alba* (L.) Hassk. (Bhangra)

**NIF Database**

**Uses from Bihar**

Greying of hair
Handful of leaves are ground and mixed in mustard oil (50g). The mixture is then applied on the head.
- Supriya Kumari, Lakhisaray, Bihar

Earache
1-2 drops of the juice is extracted from fresh leaves and used as ear drop.
- Dipak Kumar Tiwari, Gopalganj, Bihar

Jaundice
Juice is extracted from the plant and three spoonful are given orally along with sugar candy (50g) twice a day till the ailment cures.
- Raghuvansh Prasad Singh, Munger, Bihar

**Uses from other states**

Mouth sores
Fresh leaves are chewed for immediate relief.
- Sanjay Singh Uplana, Nagda, Madhya Pradesh

Cough
Juice is extracted from the pounded leaves and honey is added. 1-2 drops of this is given thrice a day.
- Sanjay Singh Uplana, Nagda, Madhya Pradesh

Bodyache
Juice is extracted from the leaves and applied.
- Vijay Gupta, Mujjafarpur, Uttar Pradesh

Cuts
Shoot paste is applied on cuts.
- Rani B. Bhagat, Pune, Maharashtra

**Uses in Classical Codified Literature**

Powder of dried aerial parts is used for asthma; buds are ground in sesame oil and applied on the forehead to get rid of headache; plant is applied on ringworm lesions.

‘Bhringraja’ is used as a liver tonic and for various chronic skin diseases. ‘Eclipta tincture’, is a highly effective medicine of liver ailments such as cirrhosis and infective hepatitis and other conditions involving hepatic enlargement. Thirteen patents have been found on its medicinal applications mainly for liver disorders and for hair care.

Source: http://www.missouriplants.com/Whiteopp/Eclipta_alba_plant.jpg

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Uses from Bihar

**Fever**
Leaves (5g), along with those of *Picrorhiza kurroa Royale ex. Benth.* (5g), are boiled in 100ml of water till the decoction remains 10ml. This is taken orally till the ailment cures
- Hariom Kumar, East Champaran, Bihar

**Malaria**
Equal amount of leaves of *indrajo* and *Cyperus rotundus L.* are ground into a fine powder. One spoonful is taken orally to combat the disease
- Chandan Kumar, East Champaran, Bihar

**Dysentery**
Paste is prepared from the bark. 10g of the paste is given along with a spoonful of honey
- Kundan Kumar, East Champaran, Bihar

Uses from other states

**Kidney stone**
Juicy paste of the bark is mixed with soured ghee and taken
- Robert L. Hnamte, Aizawl, Mizoram

**Bodyache**
Bark is ground in water; some quantity is taken orally and the rest is applied on the body
- Devaram, Sirohi, Rajasthan

Uses of *Holarrhena antidysenterica* Wall. (*Indrajo*)

**NIF Database**

**Anemia**
Paste of bark is mixed with salt and taken orally
- Robert L. Hnamte, Aizawl, Mizoram

**Skin disease**
The dried bark is powdered, mixed with ghee and honey and is taken orally
- Robert L. Hnamte, Aizawl, Mizoram

**Uses in Classical Codified Literature**

Dried bark powder is given orally to cure stomachache; seeds are ground into a powder, a dose of 5-10g of the powder is given with water as an antidote and a paste of the seeds is also applied locally to relieve pain and swelling on poisonous bites.

‘Diarex vet’ is used for diarrhoea in cattle. ‘Kutajarista and Kutajavaleha’ are the most popular preparations used in diarrhoea, dysentery, colitis and bleeding problems.

Thirteen patents have been found on its medicinal applications mainly for gastrointestinal disorders.
Uses of *Leucas aspera* Spr. (Guma)

**NIF Database**

**Uses from Bihar**

**Fever**
Equal amounts of flower of guma; leaves of *Azadirachta indica* A. Juss., * Ocimum sanctum* L., roots of *Cyperus rotundus* L., *Solanum xanthocarpum* Schrad. & Wendl. and black pepper seeds are pounded and the juice extracted, two spoonful are taken orally.
- Nushrat Jahan, Gopalganj, Bihar

**Stomachache**
Curry made from the plant is taken.
- Usha Rani, Darbhanga, Bihar

**Eczema**
Plant is burnt and some coconut oil is mixed with the ash. The paste is applied on the infected body part.
- Gokul Singh, East Champaran, Bihar

**Piles**
Equal amounts of roots of guma and black pepper are ground, a spoonful of the mixture is given twice a day till the ailment cures.
- Umesh Mishra, East Champaran, Bihar

**Veterinary practice**

**Anorexia**
Juice is extracted from the leaves and flowers, 3-5 spoonful is given orally.
- Chandrashekhar Prasad Kushwaha, East Champaran, Bihar

**Uses from other states**

**Migraine**
Juice is extracted from the freshly plucked leaves and 2 drops of the same is put in the nose.
- Ramji Chink Badaik, Gumla, Jharkhand

**Sinusitis**
Juice of leaves is put in the nose.
- Nayan Kalita, Kamrup, Assam

**Jaundice**
Juice from the pounded leaves is extracted and little quantity of goat urine is mixed; this is given twice a day for 4 days.
- Shalini Shrivastava, Balia, Uttar Pradesh

**Uses in Classical Codified Literature**

Dried plant powder is applied on scabies; the plant is used as an anthelmintic; a handful of flowers (5g) are roasted in ghee and taken once a day to cure cough.

‘Herbal Steam Bath’ is useful to get rid of various primary health and hygiene problems like cleaning and removing bad odour of the body, for treating burning sensation in eyes, watery eyes, headache, nausea, migraine etc.
Uses of *Nyctanthes arbor-tristis* L. (Harshingar)

NIF Database

**Uses from Bihar**

**Cough/cold**
Paste is prepared using three leaves and black pepper. This paste is taken orally with water.
- Ashok Kumar Yadav, East Champaran, Bihar

**Diabetes**
Decoction of the leaves is taken orally for 40 days.
- Shama Pravin, Gopalganj, Bihar

**Wound**
Topical application of leaf paste gives relief.
- Ranjeet Kumar, Sheohar, Bihar

**Piles**
Seed paste is taken orally with water.
- Lavli Kumari, Gopalganj, Bihar

**Uses from other states**

**Intermittent fever**
Two leaves of harshingar, neem, three black pepper and four leaves of tulsi are ground in half litre of water and boiled till half a cup of residue remains. This is cooled and taken orally.
- Arjun Singh, Bharatpur, Rajasthan

**Intestinal worms**
Oral intake of leaf juice kills the worms.
- Rani B. Bhagat, Pune, Maharashtra

**Pain**
Fresh leaf paste is applied on the fractured part to alleviate pain.
- Ramsharan Dhruv, Dhamtari, Chhattisgarh

**Uses in Classical Codified Literature**

Dried fruits are used orally to get relief from cough; decoction of dried flower is given with jaggery as an anti-fertility agent in females; leaf juice is applied externally on ringworm and other skin diseases.

‘Lupin’, a medicine used for pain and inflammation, is associated with musculoskeletal and joint disorders. Six patents have been found on its medicinal uses such as for treating Leishmaniasis and also for its natural property as adye.

Source: http://prathom.swu.ac.th/panmai/pic/7-10110-002-110.JPG
Uses of *Solanum nigrum* L. (Makoi)

### NIF Database

#### Uses from Bihar

**Cough**
Juice extracted from the roots is taken orally
- Priyanka Kumari, Gopalganj, Bihar

**Jaundice**
Juice extracted from the roots is taken orally
- Suman Kumari, Gopalganj, Bihar

#### Uses from other states

**Stomachache**
Leaves of makoi (200g) are fried in mustard oil (20ml), salt is added and then taken orally
- Sukhai Mali, Faridabad, Haryana

**Nasal bleeding**
Dry fruit (25g) is boiled in mustard oil (100g), oil is filtered and applied on the forehead
- Sahim Ansari, Lohardaga, Jharkhand

**Mouth ulcer**
Leaves are chewed
- Shripal Singh, Bulandshahar, Uttar Pradesh

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**Uses in Classical Codified Literature**

Powdered fruit is given orally to reduce fever; juice is extracted from the whole plant and applied externally on the burnt part; poultice of the plant is placed on the aching joint; fruits are ground and taken orally to cure diarrhoea.

‘Herbolax’, made from *Solanum* along with other plants, is used as gentle laxative, for constipation and electrolyte balance. Ninety patents were found for its medicinal uses mainly on hepatitis.

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Uses of *Vitex negundo* L. (Nirgundi)

**NIF Database**

**Uses from Bihar**

**Stomachache**
Powdered leaves of *Vitex*, *Cocculus hirsutus* (L.) Diels. and *Bombax ceiba* L. are mixed in equal ratio and taken
- Yusuf Khan, East Champaran, Bihar

**Muscular pain**
Leaves are smeared with mustard oil, warmed slightly and applied on the affected part
- Savita Kumari, Gopalganj, Bihar

**Veterinary practice**

**Wound**
Leaf paste is applied topically on wound
- Nageshwari Devi, Hazaribag, Bihar

**Uses from other states**

**Ear pain**
Leaves are boiled in mustard oil, oil is then filtered and used as an ear drop
- Bhagat Ram, Kangra, Himachal pradesh

**Ulcer**
Half cup juice is extracted from the leaves and taken orally
- P D Walikar, Bagalakot, Karnataka

**Rheumatism**
Lukewarm leaves are applied on aching joints
- Naganath Durga Chogule, Sholapur, Maharashtra

**Skin disease**
Small pieces of plant are mixed with cow’s urine and applied on the affected skin
- K. Lakshmana Shetty, South Karana, Karnataka

**Uses in Classical Codified Literature**

Smoulder leaves and inhale the smoke to get rid of cough\(^2\); in case of diarrhoea flowers are used\(^3\); extract of the plant is taken as a diuretic\(^2\).

‘Muscle & joint rub’\(^4\) is a highly effective medicine for backache, muscular sprain and joint pain. ‘Dental Cream’\(^4\) is a specially formulated toothpaste that tightens and reduces swelling of gums, stops gum bleeding, prevents toothache, decay and controls bad breath. ‘Atharva Nirgundi Siddha Tail’\(^4\) is useful in arthritis, joint pain, relieves oedema. Thirty five patents have been found on the medicinal applications like for treating rheumatic arthritis\(^3\).
PART II: HERBAL PRACTICES & PRODUCTS

Herbal Formulations for Healthy Crops

SRISTI SHASTRA
Arkhiben Vankar, Ranabhai Kamaliya, Banidan Gadhvi, Gemal Rana, Rajnikant Patel, Ahmadbhai Kadivala, Gujarat.
It flourishes the growth of the plant by increasing flowering as well as fruiting. Besides overall vegetative growth, it is not harmful to nature and human beings. It also controls sucking pests like white fly, heliothis, aphid etc.

SRISTI KRUSHAK
Popatbhai Rupabhai Jambucha, Gujarat
It is an excellent remedy for leaf curl disease. Besides controlling the disease it increases the vigor of the plants by increasing overall growth.

SRISTI SURAKSHA
Community Knowledge, Gujarat
It is a very efficient treatment for termite and acts as a vitaliser to the affected crops. To control termites the herbal formulation is mixed with sand and spread in the field. Some times it is released in the field along with the flow of irrigation water. In some cases, it is also drenched in the affected part of the plant and sprayed on the vegetation to repel termites.

SRISTI PRAYAS
Community Knowledge, Gujarat
It is a highly effective formulation to act as a herbal growth promoter, which stops shedding of flowers as well as increases the overall growth of the plant. This formulation strengthens the plants internally and enables them to withstand extreme weather conditions. Constant use of this formulation increases the yield and reduces the toxic content in our daily diet.

SRISTI SHAKTI
Community Knowledge, Gujarat
A herbal growth promoter, which helps in production of excellent quality organic food grain. Constant use of this formulation not only increases the yield but also reduces the toxic contamination in our food and environment.
PART II : HERBAL PRACTICES & PRODUCTS

Herbal Formulations for Livestock and Poultry

Coccicure
Sudakarbhai K. Gauli & Jeevalbhai M. Gauli, Dang, Gujarat

It is a unique herbal medication for prevention and curing of Coccidiosis (Eimeria sp infections) in Poultry. The primary function of the medication is to reduce the oocytes maturation and affects the life cycle of various Eimeria species.

Poultmax
Community knowledge, Valsad, Dang, Gujarat

It is a unique herbal medication for promoting poultry immunity. It cures symptoms like greenish diarrhoea, conjunctivitis, nasal sputum, drop in egg production and respiratory distress in poultry. About 30g/100 birds for 0-4 weeks & 60g/100 birds for 4-8 weeks may be administered for seven days in stress or for three days before and three days after expected stress.

Mastiherb
Ukhardiyabhai S. Raot, Dang, Gujarat

Mastiherb is a unique intramammary herbal medication for curing mastitis in animals. Clinical trials indicated efficacy of the medication over subclinical mastitis; clinical mastitis and chronic mastitis. It was also validated in case of mastitis due to Staphylococcus aureus. The dose rate was found to be single intramammary infusion for minimum three days after adequate standardization.

These formulations are based on traditional knowledge of farmers and developed by Sadbhav-SRISTI Sanshodhan Laboratory (www.sristi.org). These products are licensed to Matrix Biosciences Pvt. Ltd, Hyderabad, Andhra Pradesh. The benefits are shared with the knowledge providers, communities, nature, those who add value and other stakeholders in the knowledge and value chain.