

KNOWLEDGE FOR HIMALAYAS



National Innovation Foundation



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HONEY BEE NETWORK

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PREFACE

National Innovation Foundation has been pursuing the mission of making India innovative and a creative society since 2000 with the active support of Department of Science and Technology, Government of India. We have not been equally successful in scouting and documenting innovations and traditional knowledge practices in every state.

Thanks to the support of volunteers of Honey Bee network, we have been able to discover many unsung heroes and heroines of our society who have solved local problems without any outside help.

Despite various constraints, NIF has put together a small book celebrating creativity, innovations and traditional knowledge for/ from Himalayas. I am conscious of its limitation in terms of coverage and outreach. But if we could uncover so many examples of the ability of local communities and individuals to

solve problems on their own without outside help, how much more can be done if state and private sector agencies join hands with NIF actively.

I invite the state government and its various organs to actively support our quest to uncover many more creative communities and individuals in rural and urban areas. NIF will then help in building value chain around them.

The book is divided in two parts. Selected examples of herbal traditional knowledge are given in part one. The innovations from other parts of the country suitable for the development in the Himalayan region are given in part two.

By no stretch of imagination, could we claim that we have achieved a great deal. We have merely made a simple point. There are a large number of knowledge rich people who may

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not have been educated much, may in fact be economically poor also, but still have the ability to solve a few problems so well.

The challenge really is to work out a synergy so that no creative voice remains unheard, and no solution remains localized and unrecognized. By adapting public policy in support of grassroots innovators and traditional knowledge holders, we can make economic development process more inclusive and sustainable.

This book on innovations has been compiled at the request of Dr. Vijay Kelkar, Chairman, Finance Commission and Member, Governing Council of the National Innovation Foundation as a tribute to the creativity and innovation at grassroots. This presentation is part of a series of innovation compendium prepared for each State of India. We hope this will be followed up in the form of concrete policy and institutional initiatives in

each State to empower creative people to improve the quality of life of common people and thus promote inclusive growth.

It is my belief that such examples will act as spur for other State government departments to look for creative efforts of their staff and users at ground level. I hope that NIF will have the opportunity to work closely with the State government in future and expand knowledge base, add value to selected technologies and help them diffuse through commercial and non-commercial social channels for improving the livelihood of the majority of the people.



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Building a Bridge with Grassroots Innovators in Informal Sector

To make Indian development process more inclusive, there is no escape from building upon creative and innovative experiments pursued by common people at village or semi-urban level. Many of these experiments lead to development of innovations, which can improve productivity and generate employment. However, the purpose of a particular innovator may often be to solve his problem. There is no mechanism available for him to share the knowledge, innovation or practice with other people in different regions. Sometimes, ideas and innovations get diffused through word of mouth. But many times, these ideas remain localized. In the process, potential growth and social development gets constrained. To overcome this constraint, Honey Bee Network with a handful of volunteers triggered a movement, twenty years ago to scout, spawn and sustain the unaided innovations and outstanding traditional knowledge from the informal sector of our country.

Drawing upon this experience, NIF (National Innovation Foundation) was set up in 2000 with the help of Department of

Science and Technology, Government of India to scale up the idea of learning from grassroots innovators.

Under the inspiring leadership of Dr. R. A. Mashelkar, Chairperson NIF and former Director General, Council of Scientific and Industrial Research (CSIR), NIF has taken major initiatives to serve the knowledge-rich, economically poor people of the country. It is committed to make India innovative by documenting, adding value, protecting the intellectual property rights of the contemporary unaided technological innovators, as well as of outstanding traditional knowledge holders. It aims at promoting lateral learning among local communities to generate low cost affordable solutions of the persistent and emerging problems, and enhance the diffusion of innovations on a commercial as well as non-commercial basis.

How does NIF work?

Primarily, NIF has five functions: (a) Scouting and documentation, (b) Value addition and research and

¹ The Honeybee collects pollen from the flowers but they are not impoverished, in the process links one flower to another enabling cross-pollination. Similarly, the Honey Bee Network strengthens people-to-people contacts, learning and networking by pooling the solutions developed by individuals across the world

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development, (c) Business development and Micro Venture, (d) Intellectual Property Rights protection and (e) Dissemination, database development and IT applications.

NIF has been entrusted with the responsibility of building a National Register of Grassroots Innovations and Traditional Knowledge. It is not enough to document or disseminate the innovations or outstanding traditional knowledge. Value addition is very important for harnessing the full potential of the idea. NIF has entered into MOU with CSIR and Indian Council of Medical Research (ICMR) besides other organizations. CSIR has allocated funds to support research on grassroots innovations in CSIR labs. Similarly, ICMR supports research on such herbal healing knowledge, which has not been documented in the classical texts and formal institutional literature. NIF also helps in generating a very large pool of open source / public domain technologies. A small number of innovations are also protected by patents and other IPRs.

The Honey Bee Network strongly believes in sharing knowledge among the providers of innovations in their own language, which is achieved by publishing local language versions of Honey Bee newsletter. It also ensures that a fair

For most innovators, attracting risk capital for converting innovations into enterprise is very difficult. They neither can offer much collateral nor are they able to develop business plan or deal with formal R&D system.

A Micro Venture Innovation Fund (MVIF) has been set up with the help of SIDBI to provide risk capital for technologies at different stages of incubation. Under single signature, innovators are trusted and investments are made to help them commercialise their innovations. Most innovators do not make good entrepreneurs. For entrepreneurship, one has to make consistent batch by batch production of products. Innovators are often incorrigible improvisers. They seldom make two things alike. NIF has helped such innovators to license their technologies to third party entrepreneurs. Most of the licenses have been given to small entrepreneurs and in a few cases, to medium enterprises.

A very elaborate benefit sharing system has been developed, governed by the Prior Informed Consent (PIC) of the knowledge

share of benefits arising from commercial exploitation of local knowledge and innovations reaches the innovators and knowledge providers.

providers. Attempts made to share benefits not only with the innovators but also with their communities and for nature conservation. In addition, a small part is kept for contingency support to needy innovators, for R&D stakeholders, promoting women's innovations and meeting overhead costs.

It is remarkable that grassroots innovations are generating global demand, as evident from inquiries from around fifty-five countries for various technologies, NIF has succeeded in commercializing products across countries in six continents apart from being successful in materialising thirty cases of technology licensing with the help of partner agencies.

What has it done?

With major contribution from the Honey Bee Network, NIF has been able to build up a database of more than 1,00,000 ideas, innovations and traditional knowledge practices from over 500 districts of the country.

NIF has filed 182 patents in India and seven in US and one PCT application. Out of these, 33 patents have been granted to grassroots innovators in India and four in US. NIF has funded 113 projects under MVIF to the extent of Rs.1.3 crores. Hundreds

of technologies have diffused through farmer to farmer social network.

NIF has proved that Indian innovators can match anyone in the world when it comes to solving problems creatively. Where they perform better than the rest is in generating more affordable sustainable solutions by using local resources frugally.

Those who see poor only as the consumer of cheap goods, miss the knowledge richness at the grassroots level. *The Poor can be the Providers also.*

The Grassroots to Global (G2G) model that NIF is propagating is all set to change the way the world looks at the creativity and innovations at grassroots.

How can state government join hands with NIF?

- a. NIF has no field extension unit nor does it want to have one. However, state government has several field functionaries in the field of agriculture, education, industry, rural development, women and child care, forestry, etc. There can be a very fruitful partnership between NIF as a source of innovative ideas and technologies and state

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- government as partner in dissemination, value addition and even commercialization through incentives, promotion, subsidies, etc.
- b. State government can join the national campaign for scouting innovations and traditional knowledge and motivate its grassroots functionaries to join hands to help in uncovering the talent at the community level.
 - c. Students in schools and colleges can be motivated to scout creative and innovative people in their neighbourhoods and send the entries to NIF (Post Box No.15051, Ambavadi, Ahmedabad 380 015, campaign@nifindia.org). Examples of innovations can also be included in the curriculum of the school children.
 - d. Demonstrations and trials can be organized at various regional research stations, KV/Ks (Krishi Vigyan Kendras) so as to create awareness about the creative potential of common people.
 - e. The research institutions can be mandated to add value to the knowledge of innovative people and help in protecting their knowledge rights.
 - f. On the state's website, link to NIF can be given and the innovations from the region can be displayed to put forward the creative face of the state before the people.
 - g. Some of the innovative people identified by NIF and/or state government could be awarded at district and state level besides giving them support for further work.
 - h. A nodal officer could be appointed to keep a dynamic touch with NIF to ensure that all the areas of possible cooperation are explored.
 - i. I hope that NIF would be able to develop a functional, fruitful and fulfilling relationship with the government of Sikkim state. Tremendously rich knowledge of biodiversity and environment can be leveraged through the proposed association.



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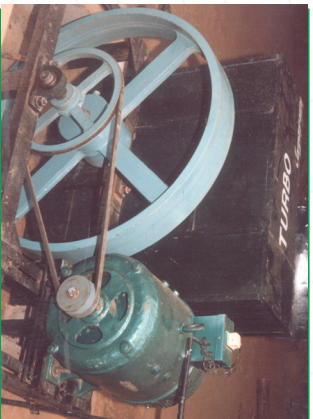
Sikkim: Mapping wind corridors, spotting prayer flags





“Innovation opens up new vistas of knowledge and new dimensions to our imagination to make everyday life more meaningful and richer in depth and content” .

- Dr. A.P.J. Abdul Kalam



“The purpose of innovation is to create a new value for an individual, team, organization or for society at large” .

- Dr. R.A. Mashelkar

PART I

HERBAL PRACTICES & PRODUCTS

This section contains details of herbal preparations used traditionally for various ailments and products based on such traditional knowledge.



Uses of *Abrus precatorius* L. (Chirmi/Konch)

NIF database

Uses from Classical Codified Literature

Backache

Powdered seeds of the plant along with the powder of rhizome of *Acorus calamus* L., roots of *Asparagus racemosus* Willd., and leaves of *Vitex negundo* L., *Cannabis sativa* L. are mixed in honey and tablets are made. One tablet is given twice a day for three to four weeks

Dried leaves and roots' powder is given orally in case of eye complaint¹; decoction of the young leaves is given orally for cough²; leaf powder is given orally in case of urine problems³; seeds' extract is used in sciatica³.

It is one of the ingredients of 'Tranquil'⁴ for relieving stress and anxiety. Ten patents have been found on the applications of *Abrus* as natural sweetener⁵, oral contraceptive⁶, etc.

Baldness

Seeds are ground into a paste and applied on the scalp along with honey

Seeds are ground into a paste and applied on the scalp along with honey

-Manglaj Purohit, Churu, Rajasthan

Mouth ulcer

Juice extracted from the green leaves is applied on the ulcers

- Chhitar Lal Gurjar, Sawai Madhopur, Rajasthan

Stomachache

Seeds (100 gm) are taken with ghee or butter for relief

Seeds (100 gm) are taken with ghee or butter for relief

- Kalpana, Trichy, Tamil Nadu

Knee pain

Seeds (6 gm) are taken orally with milk for 14 days

Seeds (6 gm) are taken orally with milk for 14 days

- Pavan Mehra, Sikar, Rajasthan



Source: National Innovation Foundation database

Uses of *Aegle marmelos* (L.) Corr. (Bel)

NIF Database

Nasal bleeding

Leaves are ground into a paste, which is applied on the top of the nose
- *Puran Chand, Kangra, Himachal Pradesh*

Headache

Equal amounts of roots of bel and leaves of *Leucas aspera* L. are ground into a paste and applied
- *Bhadr Ram Bhairai, Guwahati, Assam*

Diabetes

150ml of the juice extracted from the pounded roots is administered orally
- *Maibum Lolito Meitei, Bishempur, Manipur*

Jaundice

Juice extracted from leaves or fruits is given orally
- *Ngairangbam Santosh Singh, Imphal East, Manipur*

Eye diseases

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

Menorrhagia

Leaves' paste is administered orally to control the disorder
- *Rani B. Bhagat, Pune, Maharashtra*

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*

Sunstroke

Juice extracted from the fresh leaves is taken orally
- *Vijaya Bharati, Hazaribag, Jharkhand*

Intestinal worms

Juice extracted from the green leaves is taken orally
- *Jagjeet Bahadur, Sitapur, Uttar Pradesh*

Diarrhoea

Pulp of the ripen fruit is taken
- *Jagjeet Bahadur, Sitapur, Uttar Pradesh*

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 in Classical Codified Literature

Burnt fruit pulp is applied for rheumatic arthritis⁷; 10g fruit pulp is given before sleep to overcome morning sickness⁸; fruit rind is applied externally on hair to kill headlice⁹.

'Bael'¹⁰, prepared from *Aegle* is used in diarrhoea, dysentery and GI disorders. It has digestive and carminative properties. Lukoli's¹⁰ tonic is made from this plant along with other plants. It improves uterine circulation, and its antimicrobial and astringent actions on the mucous membrane of the genital system also help control leucorrhoea. 'Bliwa'¹¹, a product of *Aegle* is used as a medicine to cure a number of diseases. Fifty-three patents have been granted on the medicinal applications of *Aegle* for curing diabetes¹², gastric ulcer¹³ etc.



Uses of *Alstonia scholaris* (L.) Br. (Chatawan)

NIF Database

Wound

Paste of bark and leaves is applied on infectious wound

- Robert L. Hamte, Aizawl, Mizoram

Gastric

Few leaves are ground with black pepper and taken orally before food

- Indra Kanta Ojha, Sibsagar, Assam

Asthma

Decoction of bark is given orally

- Robert L. Hamte, Aizawl, Mizoram

Fever

Powdered bark (50g) is taken with water thrice a day

- Kutuva BIRTHOMI, Koderma, Jharkhand

Stomachache

Juice extracted from bark (20g) is administered orally

- Prishila Tuddu, Hazaribag, Jharkhand

Headache

Juice extracted from bark (20g) is given orally

- Prishila Tuddu, Hazaribag, Jharkhand

Joint pain

Bark paste is applied on aching joint

- Prishila Tuddu, Hazaribag, Jharkhand

Psoriasis

Seed oil is taken orally for 21 days

- P. D. Walkar, Bagalkot, Karnataka



Uses of *Cassia fistula* L. (Amaltas)

NIF Database

Ringworm

Paste of the scrubbed tuber is applied on the infected part of the body for a few days
- Kumar Chandei, Hamirpur, Himachal Pradesh

Dysentery

Equal amount of bark of *Cassia*, *Mangifera indica* L., *Psidium guajava* L. and *Spondias pinnata* (L. f.) Kurz. is ground into a fine paste. Two spoonful of this paste are administered orally
- Niru Patangia, Sonitpur, Assam

Cough

Skin of the fruit is chewed in the morning
- Santoshben Gamar, Banaskantha, Gujarat

Mouth sore

Juice extracted from the plant is kept on a banana leaf and the leaf is burnt. The ash is then applied on the affected part
-Purna Borah, Golaghat, Assam

Stomachache

Decoction of the fruit and jaggery is taken orally
- Bhagwati Lal Kumawat, Chittorgarh, Rajasthan

Uses in Classical Codified Literature

Powder of dried bark is applied in case of leucoderma²⁰, fruit juice is taken in jaundice²¹; fruits are used as diuretic²¹; root powder is applied in skin diseases²¹.

Pilex¹⁰(Vein care) helps support metabolic processes involved in maintaining the vascular system's integrity for optimum health and appearance; Purim¹⁰ (Hemo care) is used for blood purification. Six patents has been found on the medicinal applications of *Cassia fistula* like as an antiviral²².



Uses of *Centella asiatica* (L.) Urban (Brahmi)

NIF Database

Memory enhancer

Juice extracted from the leaves is administered orally
- Savitri Devi, Kangra, Himachal Pradesh

Insomnia

Plant paste is taken along with food regularly
- Khiroram Barman, Borpeta, Assam

Toothache

Equal proportions of brahmi leaves, onion and banana roots are ground to make a fine paste, which is applied on the aching tooth
- Anil Gogoi, Sibsagar, Assam

Anorexia

Juice extracted from leaves (25g) is administered orally
- Gamlalyal Hembrom, Hazaribag, Jharkhand

Stomachache

Eating of fresh leaves helps alleviate stomachache
- Krishna Chand, Kangra, Himachal Pradesh

Dysentery

Paste of leaves along with black pepper is administered orally
- Dipali Borah, Sibsagar, Assam

Diarrhoea

Whole plant is ground and juice is extracted. Two spoons of the juice, with a pinch of salt, is administered orally twice a day for one week
- Okshongbung Mamang Lekai, Bishnupur, Manipur

Jaundice
10g of the plant is ground, mixed with water, filtered and the extract is taken
- Vifitya Oraon, Lohardaga, Jharkhand

Skin diseases

Leaves' paste is applied topically
- Savitri Devi, Kangra, Himachal Pradesh

Plant is taken as a vegetable regularly
- Bablu Bediyya, Hazaribag, Jharkhand

Herbal tea

Tea is made using leaves of the plant to enhance immunity
- Jasmit Singh, Hamirpur, Himachal Pradesh

Uses in Classical Codified Literature

Fresh juice from aerial part is used as brain tonic²³; powder of aerial portion is taken to control high blood pressure²⁴; the whole plant is used as diuretic²¹; plant paste is applied as a poultice in case of bone fracture²¹.

Herbal Tea²⁵ is mainly indicated as a health drink. Mentat¹⁰ improves mental functions, mental quotient, memory span, concentration ability and stress threshold. More than three hundred patents were found on its medicinal applications mainly on anti-depressant activity²⁵.



Source: <http://www.floerapia.net/vademecum/plantas/FOTOS/Centella%20asiatica.jpg>



Uses of *Ficus carica* L. (Anjir)

NIF Database

Cold

Fruit juice is administered orally to combat cold
- *Mehnaz Tabassum, Anantnag, Jammu & Kashmir*

Gastritis

Two tablespoons of powder of shade dried fruit is mixed in 200ml of water. The mixture is left over night and is taken next morning
- *Kumar Chandel, Hamirpur, Himachal Pradesh*

Kidney disorder

Ripe fruit is eaten
- *Roomi Jan, Anantnag, Jammu & Kashmir*

Cardiac problem

Juice (2 spoons) extracted from the fruit is warmed slightly and taken orally
- *Sarathy Maity, East Midnapur, West Bengal*

Blood purification

Fruit, if taken regularly, acts as blood purifier
- *Devaram, Sirohi, Rajasthan*

Bleeding piles

Two fruits are soaked in half a glass of water for twelve hours. This water is taken after twelve hours and same process is repeated until cured
- *Kumari Sarita, Sikar, Rajasthan*

Leucoderma

Bark powder (2 spoons) is given with water
- *Sarathy Maity, East Midnapur, West Bengal*

Corns

Fruit sap is applied on corns
- *Roomi Jan, Anantnag, Jammu & Kashmir*

Itching

Topical application of leaves extract is helpful
- *Dilber Shabir, Anantnag, Jammu & Kashmir*

Uses in Classical Codified Literature

Decoction of boiled fruit is taken orally to cure cough²⁷, milky latex is applied externally to get rid of warts²¹; juice extracted from fruit is taken in case of constipation²¹; fruit juice also acts as a laxative²¹.

Refreshing fruit pack¹⁰ prepared from fig rejuvenates the facial skin. Four patents have been found on medicinal applications of fig like in treating tumor²⁸ etc.



Uses of *Jatropha curcas* L. (Ratanjyot)

NIF Database

Jaundice

Juices extracted from leaves and bark is mixed with jaggery. One tea-spoonful of this mixture is given orally

- *Dimbeswar Gogoi, Sibsagar, Assam*

Tumor

Leaves are warmed after smearing with oil and tied on the tumor

- *Madhav Shankar Rao Patil, Jalgaon, Maharashtra*

Skin disease

Paste made from the leaves is applied topically

- *Madhav Shankar Rao Patil, Jalgaon, Maharashtra*

Thorn pain

Latex of the plant is applied on the affected part

- *Madhav Shankar Rao Patil, Jalgaon, Maharashtra*

Eczema

Jatropha oil (60 g) and bee wax (30 g) is heated at 60°C and borax (1 g) is added in water (10 ml); both are mixed together and stirred slowly on simmer flame. The resultant ointment is applied on the infected area

- *Raghubir Agarwal, Hissar, Haryana*

Agnail

Latex is applied on the infected part

- *Atilik Baruah, Sibsagar, Assam*

Piles

Juice extracted from the leaves is given orally

- *Chingakhem Binashaki Devi, Imphal West, Manipur*



Uses in Classical Codified Literature

Veterinary practice

Foot & mouth disease

Seeds are ground with latex of *Calotropis gigantea* R.Br. and edible oil in small amount. The paste obtained is applied topically

- *Gandubhai, Dang, Gujarat*

Bark powder is taken orally with water to get cured from pyorrhoea²⁹; leaves are useful in ulcer²¹; young branches are warmed in fire and tied on the aching joint³⁰; latex is applied on the burnt part³¹.

'Jatropha tincture'³² is used as a disinfectant, antiparasitic and anticoagulant. Thirteen patents have been found mainly on the medicinal uses such as for cuts, burns and wounds³³.

Uses of *Juglans regia* L. (Akhrot)

NIF Database

Hair care

Daily application of the oil on the scalp reduces hair fall
- *Joginder Singh Negi, Kullu, Himachal Pradesh*

Wounds

The sap of the fruit is directly applied on the affected part
- *Nasir Ahmed Shaik, Anantnag, Jammu & Kashmir*

Unripe fruit rind is ground into a fine powder and applied on injured body part

- *Mohd. Jamal Sheikh, Anantnag, Jammu & Kashmir*

Tongue cleaning

Bark of akhrot is chewed along with the leaves of neem (*Azadirachta indica* Juss.)

- *Shilpa Jain, Rajkot, Gujarat*

Swelling on body

Oil (50gm) is mixed with with cow's urine (10gm) and taken

- *Shripal Singh, Bulandshahar, Uttar Pradesh*

Knee pain

Couple of fruits are taken everyday to get relief
- *Koushlya Kumawat, Sikar, Rajasthan*

Memory enhancer

Mesocarp of the fruit is ground and tablets are prepared from it. One tablet is taken orally thrice a day
- *Sapam Deben Singh, Bishempur, Manipur*

Uses in Classical Codified Literature

Poultice of fruit is applied externally on abscess³⁴, the fruit is used as carminative²¹; oil extracted from fruit is taken to get rid of tapeworms²¹; the plant is used to cure rheumatism¹⁴.

¹⁴Fairness cream¹⁰ improves complexion, nourishes and makes the skin soft; Gentle exfoliating walnut scrub¹⁰ gently exfoliates dead skin cells. Thirty patents have been found on the medicinal applications of walnut in antitumor³⁵ medication, for haircare³⁶, etc.



Source: SRISTI Database

Uses of *Nyctanthes arbor-tristis* L. (Harshingar)

NIF Database

Malaria

Juice of the leaves is taken orally along with honey
- Prabati Kalita, Kamrup, Assam

Intestinal worms

Juice of the flowers is extracted after squeezing them. Two spoonful of this juice are taken orally for two days with a pinch of salt
- Manoj Kalita, Kamrup, Assam

Hair fall

Seeds are crushed in water and the paste is applied on hair scalp
- Rani B. Bhagat, Pune, Maharashtra

Cough/cold

Paste is prepared using three leaves and black pepper. It is then taken orally with water
- Ashok Kumar Yadav, East Champaran, Bihar

Fever

Decoction of the leaves is given orally
- R.K. Bheirosana Singh, Bishnupur, Manipur

Leaves (6-7), along with ginger, are crushed to extract juice, which is administered orally thrice a day
- Rani B. Bhagat, Pune, Maharashtra

Wound

Topical application of leaves' paste gives relief
- Ranjeet Kumar, Sheohar, Bihar

Pain

Fresh leaf paste is applied on the fractured part to alleviate pain
- Ramsharan Dhruv, Dhantari, Chhattisgarh

Diabetes

Decoction of the leaves is taken orally for 40 days
- Shama Pravin, Gopaligani, Bihar
Juice of the leaves is taken orally
- Rani B. Bhagat, Pune, Maharashtra

Uses in Classical Codified Literature

Dried fruits are taken orally to get relief from cough³⁷; decoction of dried flower is given with jaggery as an anti-fertility agent in females³⁸; leaf juice is applied externally on ringworm and other skin diseases³⁸.

'Lupin'³⁹, is a medicine used for pain and inflammation associated with musculoskeletal and joint disorders. Six patents have been found on its medicinal uses such as in treating Leishmaniasis⁴⁰ and also for its natural property as a dye⁴¹.



Source: <http://pbrion.swu.ac.th/pammlpic/7-10110-002-110.JPG>

Uses of *Phyllanthus emblica* L. (Amla)

NIF Database

Eye irritation

Juice from ripen fruit is extracted and an equal amount of honey is added. One drop of the mixture is put in the eyes before going to bed at night

- *Indira Chandel, Biliaspur, Himachal Pradesh*

Diabetes

Equal amounts of amla, *Terminalia chebula* Retz., *Terminalia bellirica* Roxb. are ground into a fine powder. Two spoonful of this powder are given orally

- *Pritam Chand, Kangra, Himachal Pradesh*

Stomach ulcer

Equal amounts of amla and *Terminalia chebula* Retz. are taken and powder is made. Two spoonful of powder, along with two spoonful of honey and four spoonful of water are taken, mixed properly and administered orally

- *Guna Ram Kanikar, Golaghat, Assam*

Diarrhoea

Juice of amla, with an equal quantity of lemon juice, is administered orally

- *Bina Chaudhry, Kamrup, Assam*

Cough/cold

Powder is prepared from fruits (4) and *Glycyrrhiza glabra* L. (10g). 5g of this powder is taken with a glass of water

- *Ved Prakash, Faridabad, Haryana*

Jaundice

Equal amounts of amla fruit, ginger, black pepper and turmeric are ground into fine powder. One tea-spoonful of this powder is given with honey

- *Nagarmal Bagaria, Nagor, Rajasthan*

Wounds

Pounded leaves are applied on wounds

- *Sevaram Bhaskar, Dhamtari, Chhattisgarh*

Gynecological disorder

Equal amounts of amla, tapioca and cumin are ground into a fine powder. One spoon of the powder is given orally to cure the disorder

- *Guna Ram Kanikar, Golaghat, Assam*

Poisonous bite

About 3-4 root pieces along with a leaf of *Areca catechu* L. are chewed to get relief from the effect of poisonous bites

- *Anna Gangavam, Osmanabad, Maharashtra*

General health

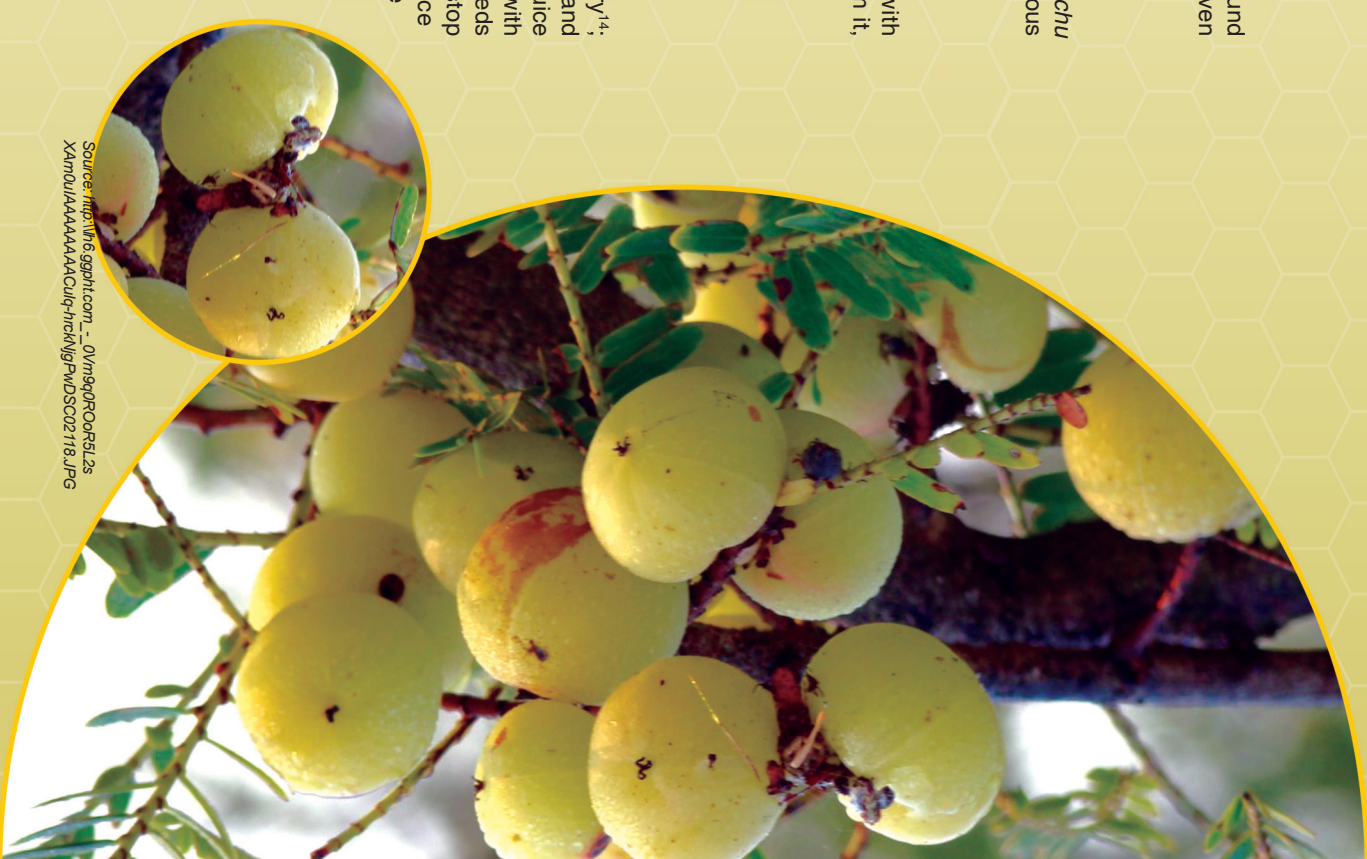
Seeds are ground into fine powder and cooked with ghee and sugar, and small laddos are prepared from it, which are then eaten

- *Dharanveer, Yamunanagar, Haryana*

Uses in Classical Codified Literature

Bark and fruits are used in diarrhoea and dysentery¹⁴, fresh juice of the fruit, mixed with pure cow's butter and honey, is administered to cure obstinate hiccup¹⁴, juice relieves pain in urine trouble¹⁴, pulp (2-3g) is eaten with warm milk to get rid of headache⁴²; powder of seeds after mixing with ghee is applied on the head to stop nasal bleeding⁷; fruits are taken orally to reduce acidity⁴³; decoction of the fruit is taken to increase blood count⁴⁴.

Phyllanthus is one of the main ingredients of well known medicines 'Triphala, Chavanprash and Amla hair oil'¹⁰. Seventy-six patents have been found on its medicinal uses such as for diabetes⁴⁵, liver disorders and immune deficiencies⁴⁶.



Uses of *Solanum nigrum* L. (Makoi)

NIF Database

Tonsillitis

Equal amount of leaves of *Solanum* and *Alpinia galanga* Willd. are ground and tablets prepared from it. One tablet is administered orally twice a day
- Yumnam Rajenkumar Singh, Imphal West, Manipur

Stomachache

Leaves of *Solanum*, neem and *Vitex negundo* L. are fried and administered orally twice a day
- Moirangthem Mani Devi, Imphal West, Manipur

Nasal bleeding

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

Mouth ulcer

Leaves are chewed
- Shripal Singh, Bulandshahar, Uttar Pradesh

Cough

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

Leaves of makoi (200g) are fried in mustard oil (20ml) and administered with little salt
- Sukhrai Mali, Faridabad, Haryana

Jaundice

Juice extracted from the roots is administered orally
- Suman Kumari, Gopalganj, Bihar



Source: http://thebegevalley.org.au/uploads/tx_silverplantgallery/Solanum_nigrum_02_black%20highshade.jpg

Uses of *Tinospora cordifolia* (Willd.) Miers ex Hk. f. & Th. (Giloy)

NIF Database

Jaundice

Juice extracted from stem is administered orally till cured

- *D. K. Phukan, Guwahati, Assam*

Piles

Whole plants (50g) are boiled, dried and ground into a fine paste. Tablets are then prepared and one tablet is administered orally to the patient thrice a day for 3-5 days

- *Pukhram Angouba Singh, Bishnupur, Manipur*

Migraine

Stem of the plant (250g) is boiled in water along with green gram (250g) and sesame oil (250ml) till half of the decoction remains and then applied on the forehead

- *Stedimron Arackal Paul, Port Blair, Andaman & Nicobar Island*

Asthma

Juice is extracted from the leaves and two spoonful are administered orally with honey for 40-42 days

- *Ramabandhu Mahajan, Jalgaon, Maharashtra*

Chronic fever

Whole plant (50g) and leaves of *Ocimum sanctum* L. (11) are soaked overnight and pounded together next morning, and given to the patient with honey or sugar candy

- *Jagjit Bahadur, Sitapur, Uttar Pradesh*

Diabetes

Fresh leaves (1-2) are taken empty stomach

- *D. K. Phukan, Guwahati, Assam*

Powder of the leaves (¼ spoon) is taken regularly

- *Patel Singh, Hissar, Haryana*

Juice of the plant and radish is extracted and given orally

- *Jagjit Bahadur, Sitapur, Uttar Pradesh*

Rheumatism

Plant (25g), dry ginger (5g) and sesame oil (5g) is mixed and soaked in water overnight and next morning the mixture is filtered and administered

- *Jagjit Bahadur, Sitapur, Uttar Pradesh*

Veterinary practice

Anestrus

Plant, along with bark of *Cassia fistula* L. and leaves of *Artocarpus heterophyllus* Lam., is ground and administered orally

- *Honnegowda, Bengaluru rural, Karnataka*

Uses in Classical Codified Literature

Powdered roots are taken for mouth ulcers⁵²; powdered plant is administered orally with honey to get relief from stomach disorder⁵³; the stem is bitter and is used as anthelmintic²¹; decoction of the plant is given orally to cure diarrhoea⁵⁴.

Tinospora is a well known medicinal plant and used to cure a number of diseases in combination with other plants with brand names 'Geriforte, Diabecon'¹⁰ etc. More than hundred patents have been found on its medicinal applications such as an anti-allergic⁵⁵, for cancer⁵⁶ etc.



Source: SRISTI database

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, without being harmful to nature as well as human being. It also controls sucking pests like white fly, heliothis, aphid etc.

SRISTI KRUSHAK

Popathbai Rupabhai Jambucha, Gujarat

It is an excellent remedy for leaf curl disease, which not only controls the disease but simultaneously increases the vigor of the plants by increasing its 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 is spread in the field, some times it is released in field with the flow of irrigation water. In some cases it is also drenched in the affected part of the plant as well as sprayed on the vegetation to repel termites.

SRISTI PRAVAYAS

Community Knowledge, Gujarat

It is a highly effective formulation to act as a herbal growth promoter, which also 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 not only increases the yield but also reduces the toxic contents 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.

~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.



Herbal Formulations for Livestocks and Poultry~

Coccicure

Sudakarbhai K. Gaudi & Jeevalbhai M. Gaudi, 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 & three days after expected stress.

Masitherb

Ukhardiyabhai S. Raot, Dang, Gujarat

Masitherb is a unique intramammary herbal medication for curing mastitis in animals. Clinical trials indicated efficacy of the medication over subclinical mastitis; clinical mastitis & chronic mastitis. It was also validated in case of mastitis due to *Staphylococcus aureus*. The dose rate was found to be single Intra mammary infusion for minimum 3 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.



**Diverse in design,
symmetric in nature**



Strength does not come through concrete in shifting sands,
layers of disconnectedness

Making Homes: Sikkim





NATIONAL INNOVATION FOUNDATION, INDIA

The Sixth National Biennial Competition for Green Grassroots Unaided Technological Innovations and Traditional Knowledge

Co-sponsors



Honey Bee Network



CSIR



SRISTI



IIM-A

The competition

The NIF, set up by Department of Science and Technology, GOI, seeks entries of unaided technological innovations and traditional knowledge developed by an individual or group comprising farmers, artisans, fishermen and women, slum dwellers, workshop mechanics, students, local communities etc., in managing natural and/or other resources. The innovations can be in machines, gadgets, implements, or processes for farm operations, household utility, transportation, energy conservation or generation, reduction in drudgery, creative use of biodiversity, development of plant varieties, generation of herbal remedies for human or animal health or developing new or any other low cost sustainable green technology related to various aspects of survival in urban and rural areas. Creative ideas for innovative technologies which have not yet been reduced to practice are also welcome. Communities developing People's Biodiversity Register (PBR) or People's Knowledge Register (PKR) are encouraged to register/link their knowledge base with the National Register at the NIF.

The awards

The best three innovations and traditional knowledge practices will be awarded Rs 1,00,000, Rs 50,000 and Rs 25,000 each in different categories. In addition, individuals and/or organizations that make extraordinary contributions in scouting grassroots innovations and traditional knowledge may also get awards worth Rs 50,000, 25,000 and 15,000 respectively besides recognition to many others. There will be several consolation prizes of Rs 10,000 each in different categories depending upon the number of entries and incremental inventiveness and potential social and environmental impact. Three most outstanding innovative ideas may be given prizes of Rs 50,000, 25,000 and 15,000 in addition to consolation prizes of Rs 5,000 each. There are special prizes for innovations by or dealing with, physically challenged people. The

innovations /ideas of professionally trained persons are not considered for award or financial support. There are special awards for journalists writing about grassroots innovations and/or traditional knowledge and creating greater awareness about NIF's missions. *The award money may be revised in due course.*

Students

Young inventors and innovators are invited to send their ideas or innovations for a special category of awards for them. These should be unsupervised, an outcome of their own creativity, without any support from their teachers or outsiders. There will be prizes worth Rs 15,000, 10,000 and Rs 7,500 for the best three entries and several consolation prizes of Rs 5,000 each in this category.

How to participate

Individuals or groups may send as many entries as they wish on plain paper providing a) genesis of the innovation and traditional knowledge b) its background and c) educational qualification and occupation, accompanied by photographs and/or videos if possible and any other information that may help in replicating the innovations/traditional knowledge. Herbal entries may be accompanied by dried plant samples to enable proper identification procedure. **The Sixth National Competition started on February 1, 2007 and entries would be accepted till December 31, 2008.** Every entry should include the **full postal address** to facilitate further communications.

Where to send entries?

National Coordinator (Scouting & Documentation), National Innovation Foundation, Bungalow No. 1 Satellite Complex, Premchand Nagar Road, Ahmedabad 380015 Gujarat
Toll Free No 1800 233 5555 Fax: (079) - 2673 1903
email: campaign@nifindia.org; www.nifindia.org