PART III

INNOVATIONS
for KARNATAKA

This section contains details of national innovations, which are deemed suitable for introduction in Karnataka

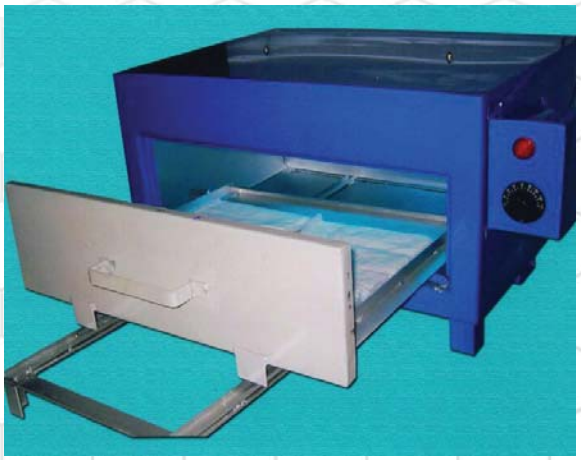
A. Muruganantham
Tamil Nadu

Sanitary napkin making machine: An option for women entrepreneurship

Sanitary napkins, a universally needed product, have a very low penetration in India due to high price and the traditional trend of using cheaper but unhygienic old cloth pieces. The innovator has developed a machine that produces quality sanitary napkins at a low cost.

One can prepare sanitary napkins with industry standard raw materials while cutting down the cost in production. It requires three to four persons to produce two pads per minute. Costing less than half of conventional options, this machine produces sanitary pads @ Rs.1 to Rs. 1.50 per pad approximately.

The innovator prefers to sell the napkin making machinery only to self-help groups of women. He has also designed a napkin vending machine such that one can put a coin and get a pad. With the support from the MVIF scheme of NIF, the innovator has been able to install over fifty units in seven states. NIF has filed a patent for the technology in the innovator's name.



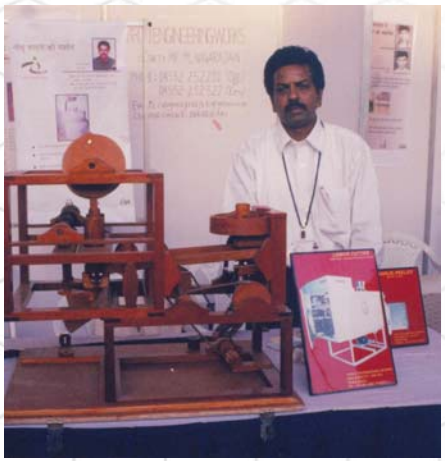
02

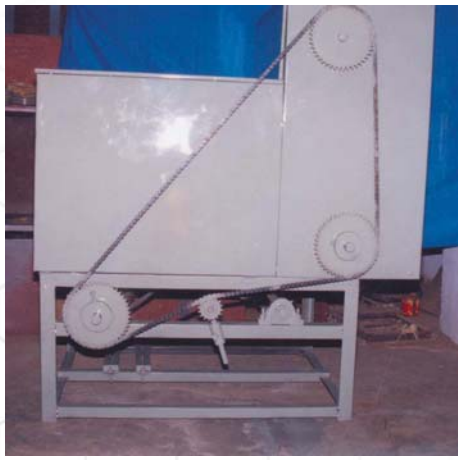
Garlic peeling and lemon cutting machine

M. Nagarajan
Tamil Nadu

Faster peeling of garlic in an effective way is a major requirement in the pickle industry. This product is a food-grade, fully automated machinery designed for bulk quantity peeling of garlic. The machine ensures minimal damage and has wide application in making pickles and herbal medicines. The machine is energy efficient, saves labour, and has low capital and operating cost. It frees the industry from capacity constraints caused by shortage of labour in peak seasons.

The second product is also used in pickle industry, but for cutting lemons. It is a cost effective machine, having innovative design, with continuous feeding system. It performs precise and standard cutting of large quantity of lemons in uniform shape and size. It can be operated by one person and cuts lemon into eight equal pieces. The innovator has been able to run a good business with the financial support of MVIF and marketing effort of NIF. Nagarajan won a National Award in NIF's Third National Competition in 2005. NIF also filed patents of the machines on his behalf.





03

Sandeep Kumar
Bihar

Bicycle that can be carried in a bag

A gritty and hard working graduate, Sandeep made this folding bicycle, which can be assembled and dismantled easily in a very little time. When dismantled and folded, the bicycle becomes portable such that it can be put in a bag and carried along!

04

Hand operated water lifting device

N Sakthimainthan
Tamil Nadu

An efficient way of pumping water to meet requirements in a cost effective way is always a challenge in rural India.

Developed from locally available materials, this hand operated water lifting device is simple in design, delivers high discharge and is low cost compared to conventional hand pump, bucket pump, and bicycle operated pumps.

Sakthimainthan won a Consolation Award in NIF's Fourth National Competition in 2007. NIF also filed a patent for the device in his name. The innovation has also been taken up for value addition at CMERI Durgapur (WB) through the NIF-CSIR JIC Fellowship Scheme.

Dharamveer
Haryana

Aloe vera gel extractor

The innovator has developed an effective multipurpose unit capable of pulverizing, steaming, and extraction of gel for herbal applications.

With this device, the innovator uses the specially designed pressure cooking chamber to extract the essence from *Aloe vera*. Being a compact portable unit, it can be quickly and easily transported and used anywhere even in the fields, to process herbs and deliver on demand. The present machine has a capacity to process 100 kg of *Aloe vera* per hour. The innovator was supported for production and commercialisation through GIAN North . One unit has been sent to Kenya on a pilot basis for application feasibility study in the country. Once the feasibility is confirmed, a contract order from the country is expected for more number of units. NIF has also filed a patent for the machine in the innovator's name.

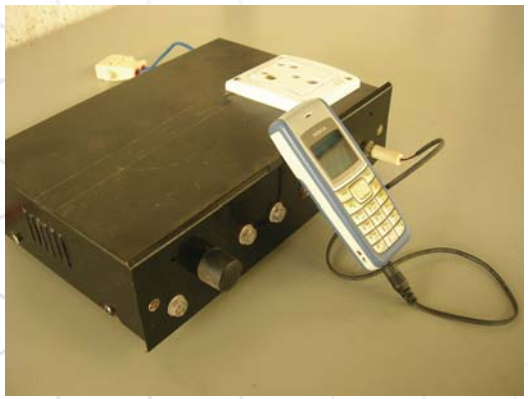
06

Mobile operated switch and multi-media poster

Prem Singh Saini
Haryana

Imagine a village where the farmer has the luxury of being able to stay at home and switch his irrigation pump in the faraway field on or off as required during the day or at night. This is made possible by this innovation, which uses the power of mobile telephony to trigger electrical control switches.

The farmer can remotely know the status of the pump in his cell phone and turn the motor on or off by calling the particular configured number. It activates the switching by certain number of rings and hence incurs no call charges. Patent was filed by NIF in the innovator's name for this technology, which also won him a National Award in NIF's Fourth National Competition in 2007. Prem Singh has developed several other innovations, one of which is the viewer triggered multi-media poster. If any agency wants to communicate some graphic message with different language audios or videos, this multi-media poster can be very useful. NIF facilitated a Mumbai based company to purchase two hundred units of the talking poster worth around eight lakh rupees for diffusion in various states. These were made available in five local languages.



07

Imli Toshi Namo
Nagaland

Hydro generator using bamboo composite

Energy generation and pumping water for irrigation is a widespread rural need.

The innovator has used the bamboo powder, a by-product from the bamboo lathe machine invented by him, and mixed it with a resin to create a strong composite to fabricate the lightweight hydro turbine for generation of energy.

08

Auto air kick pump

Arvindbhai Patel
Gujarat

This innovation is a low cost, portable, compact aid to inflate tyre tubes/punctures of any vehicle having kick start or auto start mechanism so as to fix the problem on the spot and enable the rider to reach the nearby gas station or repair shop.

This device uses the existing air inside the compressor, so that, while kick starting, this air is utilized and transferred to the tube. A pinch of polymer granules is also inserted to seal the leakage in the tube.

Arvindbhai won a National Award in NIF's Second National Competition in 2002. NIF, apart from filing a patent in his name, facilitated sales of a few hundred pieces to customers in Assam and Arunachal Pradesh through dealership technology licensing and local entrepreneurs.

Bhanjibhai Mathukiya
Gujarat

Vanraj- 10 HP Tractor

This innovation, developed over fifteen years, is a compact yet powerful 10 HP "convertible" tractor. The front axle is designed facilitating its deployment as a "three wheeler" at low speed for farming operations and a "four wheeler" at higher speeds for transporting goods to the market. The tractor is built with an adjustable wheel base for various inter-culturing operations, thereby enabling the farmer to repair the unit with minimal effort or skills.

For the tractor, Bhanjibhai won a National Award in NIF's Second National Competition in 2002. As a result of NIF's facilitation, he also obtained patents for his tractor in India and USA.

10

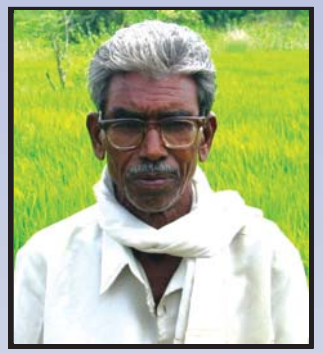
Biomass gasification system

Rai Singh Dahiya
Rajasthan

There are lots of villages in the country which are still not electrified or are receiving power erratically. Crude oil is not a very likely solution as it is depleting and the price is also going higher day by day. Use of biomass as a fuel therefore appears to be a good solution!

People using the biomass gas (producer gas) as a fuel generally complains of choking in the engine after running for a certain period of time. The innovator has changed the conventional design of gasifiers especially the filters and cooling unit to get clean gas, ensuring smooth operation of engine at low operational cost. On an average the biomass requirement is one kg/kW-h and the costs of 10 kW, 25 kW, 30 kW and 35 kW biomass gasifier system are Rs. 1, 25,000, Rs. 2,00,000, Rs. 3,00,000 and Rs. 3,25,000, respectively.

Scientists from TERI (The Energy Research Institute) have confirmed its uniqueness and over fifty users have confirmed its operational practicability. The innovator has sold over fifty units after getting MVIF Support from NIF through GIAN North.



Dadaji Ramaji Khobragade
Maharashtra

HMT: An improved paddy variety

Khobragade selected and bred the HMT rice variety from the conventional 'Patel 3', a popular variety developed by Dr. J. P. Patel, JNKV Agriculture University, Jabalpur. He succeeded after five years of continuous study and research on a small farm owned by him without any support from the scientific community. This varierty has an average yield of 40 – 45 quintals per hectare with short grains, high rice recovery (80 %), better aroma and cooking quality in comparison with the parent ones. Most remarkable feature of the variety is the thinness of grain. It has been included as a standard reference for thinness by Protection of Plant Variety and Farmers' Right Authority (PPVFRA).

He won a National Award in NIF's Third National Competition in 2005. NIF has filed an application under PPVFRA 2001 to register his variety. Apart from HMT he has also developed six other paddy varieties namely DRK, Vijay Anand, Nanded Chinur, Nanded 92, Deepak Ratna and Nanded Hira. He regrets that local agricultural university took the credit merely for purifying the seeds and did not give him the due honour. HMT has diffused in more than one lakh acres in five states.

12

Herbal growth promoter

Ishwar Singh Kundu
Haryana

A herbal plant growth promoter, which is effective in protecting the plants from a broad spectrum of pests apart from providing necessary nutrition has been developed. It is named as "*Kamaal*" meaning wonderful, due to its performance. It is effective in field crops as well as in vegetable crops.

The main ingredients of the product are "*aak*" (*Calotropis gigantea*), "*reetha*" (*Sapindus trifoliatus*), "*dhatura*" (*Datura metel*), "*neem*" (*Azadirachta indica*), Tobacco (*Nicotiana tabacum*), and "*bhang*" (*Cannabis sativa*), etc.

The innovator won a Consolation Award in NIF's Fourth National Competition in 2007. He has also been supported under the MVIF of NIF for commercialising "*Kamaal*". The product is a good hit in the local market and is fetching steady income for the innovator. This product has also been supplied for use in the gardens in the Rashtrapati Bhavan with encouraging results.

Sheikh Jahangir Sheikh Usman
Maharashtra

Two-wheeler based spray painting device

The innovation is a painting device that can be easily mounted on a two-wheeler scooter and carried to a customer's place. Deriving power from the two-wheeler's engine to run the compressor, this device lends flexibility of usage to the painter. This innovation won Sheikh Jahangir, a Consolation prize in NIF's Fourth National Competition in 2007. NIF has also filed a patent application for the same and has supported him through the Micro Venture Innovation Fund. He has also made a scooter based washing machine and a scooter mounted flour mill.

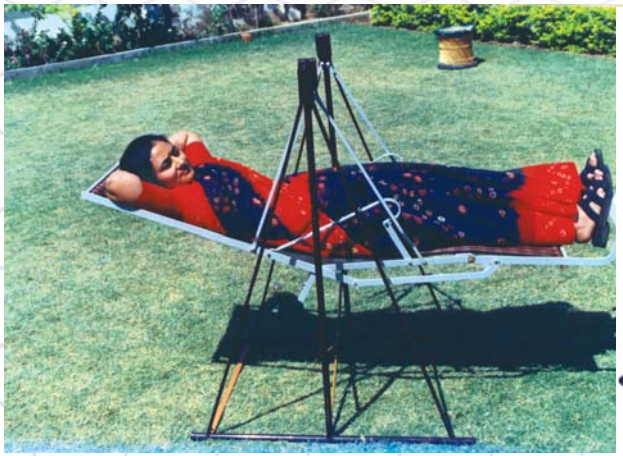
14

Maruti Jhoola- the health care chair

Sakrabhai Prajapati
Gujarat

Modern life with its fast pace and sedentary lifestyle has created the need for solutions incorporating relaxation and invigoration. Maruti Jhoola is a unique health chair with multiple capabilities, functions and settings for various postures and seating dynamics.

It is ergonomically designed and serves the purpose of seating as well as exercising, with a capacity to accommodate a person weighing 120 kgs. It can double up as a hammock or a jhoola. The health chair has established itself as useful for people suffering from arthritis and joint ailments. To facilitate market, an entrepreneur has been engaged. Lot of cost was spent on packaging and transportation of the chair. It is now being redesigned and the cost may come down.



Yusuf Khan
Rajasthan

Groundnut digging machine

Harvesting groundnut is a tedious process. While digging nuts, sometimes upto 20 percent of the pods are left underground. Complete digging out of all the groundnut pods from the soil is often not possible as manual labor is scarce, expansive and other means are not available. The innovator has revolutionized groundnut digging with this sturdy rugged desert unit which is retrofitted on a standard 35HP tractor. As the tractor moves forward, the vanes at the bottom of this unit rotate, digging and scooping out the soil-groundnut mixture and dropping them into a vibrating storage bin. The bin has fine sieves at the bottom which lets out the soil while trapping the individual groundnut pods on the top. The hatch at the back of the unit is used to take out the groundnuts.

The unit consumes four litres of diesel per hour and completes digging of one hectare per day. The unit can run on uneven terrain and can also be used to sift out small stones, solid residue and garbage from fields and country roads.

The innovator won a National Award in NIF's Third National Competition in 2005. He has been supported under the MVIF of NIF for commercialising his innovation. In 2006, the technology was licensed to a Vizag based company, Ardee Hi-Tech Pvt. Ltd. This license was targeted for its application as a sea beach cleaner. NIF also filed a patent on behalf of the innovator for the machine.

16

Bullet Santi-motocycle based multipurpose plough

Mansukhbhai Jagani
Gujarat

For small farms that lack acess to tractors and can't keep bullocks, motorcycle driven plough, also called '*Bullet Santi*' is a low cost alternative.

Using the chassis, drive and power of an Enfield Bullet motorcycle in front, the innovator has retrofitted an attachment with two wheels at the rear with a tool bar to fit various farm implements. This meets various needs such as plouging, weeding and sowing seeds. Being a unique local solution, the machine has proved to be cost effective and fuel efficient. Bullet Santi can plough an acre of land in half an hour consuming only two litres of fuel. Innovator has got a patent in India and USA. Given the fact, many other users and innovators copied this technology, he willingly accepted the concept of '**Technology Commons**' implying no restrictions for other innovators to copy and adapt. But commercial firms will need license from members of the '**Technology Commons**'. NIF filed a patent on his behalf for the implement and also gave him a National Award in its First National Competition in 2001.

Amrutbhai Agrawat
Gujarat

Aaruni - the tilting bullock cart

In a traditional bullock cart, with two wheels, part of the load is borne by the draft animals on their shoulders and neck. Moreover, the harnessing system makes it difficult to negotiate sharp bends or turns in the road. This causes galls on the neck of the bullocks, which affects not only the efficiency of the animals but also their stamina. This cart is thus designed to overcome the shortcomings of the traditional carts by having an extra wheel to balance the load. In addition, the cart has a tilting mechanism that is based on the rope and pulley system, which can be controlled by a lever located alongside the cart driver.

18

Trench digging machine

Radhey Shyam Tailor
Nathulal Jangid
Yusuf Khan
Rajasthan

While on a trip, the innovators noticed laborers manually digging the ground to make long trenches to lay telephone cables, taking months to complete the work. This inspired the innovators to build a mechanized equipment to dig trenches rapidly.

The trench digging unit developed by the innovators can be fitted to any tractor. The modified unit has a hydraulic lever to adjust digging depth and to maneuver the running unit, a planetary gear system and motion converter unit to achieve speed reduction and deliver power from the tractor.

The compact machine can dig narrow and deep channels evenly, on hard and soft soil conditions. In one hour, it can dig a pit 65 meters long, 5 feet deep and 14 inches wide, while consuming only 2.5 liters of diesel per hour. The equipment costs less than half that of imported models. It is even used by the local telephone department to lay cables.

Endnotes & References

1) Jain, S.P. and Verma, D.M. 1981. Medicinal Plants in the folklore of North-East Haryana. *Nat. Acad. Sci. Lett.* 47:269-271.
2) Cantoria, M. 1976. Aromatic and Medicinal Herbs of the Philippines. *Qut. Jour. Crude Drug Res.* 14: 97-128.
3) Jain, S.K. 2001, *Dictionary of Indian Folk Medicine and Ethnobotany*, New Delhi, Deep Publication. pp.1-311.
4) SBL Homoeopathy Clinic, http://www.sblglobal.com/tranquil.html, downloaded on 04.11.2008.
5) Kinghorn, A.D. and Choi, Young-Hee.1993. *Natural intense sweeteners*. Research Corporation Technologies, Inc.(Pat no.5198427 dt.09.07.1990; http://patft.uspto.gov downloaded on 04.11.2008)
6) Das, P.C. 1976. *Oral contraceptive long-acting- method of and system for determining the rate of an electronic* .PC Das. (Pat no. GB1445599 dt.11.08.1976; http://v3.espacenet.com downloaded on 04.11.2008)
7) Akhtar, M.S. 1992. Hypoglycaemic activities of some indigenous medicinal plants traditionally used as antidiabetic drugs. *J. Pak. Med. Ass.* 42 (11):271-277.
8) Reddy, M.B., Reddy, K.R. and Reddy, M.N. 1989. A survey of plant crude drugs of Anantapur district, Andhra Pradesh, India. *Int. J. Crude Drug Res.* 27 (3):145-155.
9) Zagari, A. 1992. *Medicinal plants*. Vol. 4. (5th ed.) Tehran, Iran. Tehran University Publications, p. 969.
10) Himalaya healthcare products, http://www.himalayahealthcare.com/products.htm, downloaded on 20.08.2008.
11) Guangkui, Z. 2008. *Chinese traditional medicine preparation for curing laryngopharyngitis.* Hunan Times Sunlight Pharmaceu (CN). (Pat no. CN101116680 dt. 06.02.2008; http://v3.espacenet.com, downloaded on 20.08.2008).
12) Muthuswamy, M.P. 2003. Polyherbal composition for the treatment of Bronchial Asthma and the process. Dalmia C.T. for Res and Dev (IN) and Murali Panchapagesa Muthuswamy (IN). (Pat no. WO03055558 dt. 10.07.2003; http://v3.espacenet.com, downloaded on 20.08.2008).
13) Siddiqui, M.B. and Husain, W. 1994. Medicinal plants of wide use in India with special reference to Sitapur district, Uttar Pradesh. *Fitoterapia.* 65 (1):3-6.
14) Bhattarai, N.K. 1989. Traditional phytotherapy among the Sherpas of Helambu, Central Nepal. *J. Ethnopharmacol.* 27 (1/2):45-54.
15) Rao, R.R and Jamir, N.S. 1982. Ethnobotanical studies in Nagaland. I. Medicinal Plants. *Econ. Bot.* 36: 176-181.
16) http://www.ayurvedicherbsdirect.com/menstricare-himalaya-p-32.html. downloaded on 08.11.2008.
17) Singh, R., Padiyar, A., Kanaujia, A. and Sharma, N. K. 2005. *Herbal formulation comprising extracts of Adhatoda, Hedychium and Curcuma as cough syrup.* Ranbaxy Lab Ltd. (Pub no.WO2005077393 (A1) dt. 25.08.2005; http://v3.espacenet.com downloaded on 08.11.2008).
18) Shanghvi, D.S., Mungre, A.P. and Zala Y.R. 2003. *New anti-asthmatic drug asmakure from indigenous herbs to cure the disease asthma*. Sun pharmaceutical Ind Ltd (Pat no. WO03030920 (A1) dt.17.04.2003; http://v3.espacenet.com downloaded on 08.11.2008).
19) Bhattarai, N.K. 1994. Folk herbal remedies for gynaecological complaints in Central Nepal. *Int. J. Pharmacog*. 32 (1):13-26.
20) Shrivastava, R.K. 1985. Aegle marmelos: An Ipso Facto plant of India. J. Res. Edu. Ind. Med. 4 (3/4):21-25.
21) Bazar of India herbal products, http://www.bazaarofindia.com/productsnew.asp?pid= 100K38&catid=BC&subcatid=CL, downloaded on 04.08.2008.
22) Pushpangadan, P. and Dhan, P. 2006. *Herbal nutraceutical formulation for diabetics and process for preparing the same*. CSIR, New Delhi. (Pat no. 7014872 dt. 21.03.2006; http://patft.uspto.gov, downloaded on 20.08.2008).
23) Rao, J.M., Sampathkumar, U., Sastry, B.S., Yadav, J.S., Raghavan, K.V., Palit, G., Rai, D., Varier, P.M., Muraleedharan, T.S. and Muraleedharan, K. 2003. *Composition for treating gastric ulcer and a process for preparing the same*. (Pat no. 20030180398 dt. 25.09.2003; http://www.freepatentsonline.com, downloaded on 20.08.2008).
24) Reddy, M.B., Reddy, K.R. and Reddy, M.N. 1988. A survey of medicinal plants of Chenchu tribes of Andhra Pradesh, India. *Int. J. Crude Drug Res.* 26 (4):189-196.
25) Arseculeratne, S.N., Gunatilaka, A.A.L. and Panabokke, R.G. 1985. Studies on medicinal plants of Sri Lanka. Part 14. Toxicity of some traditional medicinal herbs. *J. Ethnopharmacol.* 13(3):323-335.

26) Gaitonde, B.B., Kulharni, H.J., Nabar, S.D. and Joglekar, S.N. 1974. Diuretic activity of Punarnava (*Boerhavia diffusa*). *Bull. Haffkine Inst.* 2: p. 24.

27) Olukoya, D.K., Idika, N. and Odugbemi, T. 1993. Antibacterial activity of some medicinal plants from Nigeria. *J. Ethnopharmacol.* 39 (1):69-72.

28) Organic ayurvedic herbal products, http://www.ayurveda.cz/en/organic-ayurvedic-herbal-products.htm, downloaded on 20.08.2008.

29) Bapurao, M.N. 2005. *Herbal composition for the treatment of hepatic and splenic disorders*. Sahajanand Biotech Private Ltd (India). (Pub no.GB2404147 dt. 01.06.2005; http:// v3.espacenet.com, downloaded on 22.08.2008).

30) Tomer, O.S., Glomski, P. and Borah, K. 2000. *Herbal compositions and their use as agents for control of hypertension, hypercholesterolemia andhyperlipidemia*. New Jersey, Chromak Research Inc. (Pat no. 6162438, dt. 19.12.2000; http://patft.uspto.gov, downloaded on 22.08.2008).

31) Khan, M.A., Khan, T. and Ahmad, Z. 1994. Barks used as source of medicine in Madhya Pradesh, India. *Fitoterapia.* 65 (5):444-446.

32) Bhattarai, N.K. 1993. Medical ethnobotany in the Rapti zone, Nepal. *Fitoterapia.* 64 (6):483-493.

33) Maurya, R., Singh, G., Murthy, P.S.N., Mehrotra, S., Singh, D., Bhargava, B. and Singh, M.M. 2007. *Pharmaceutical composition containing Butea isoflavones for the prevention/treatment of bone disorders and a process for the preparation thereof*. CSIR, New Delhi.(Pub no. WO/2007/099432 dt. 07.09.2007; http:// www.freepatentsonline.com, downloaded on 29.08.2008).

34) Hirano, A. 2003. *Skin care preparation*. TS AASU KK, Japan. (Pub no. JP2003113031 dt.18.04.2003; http://www.freepatentsonline.com, downloaded on 29.08.2008).

35) Al-Yahya, M.A. 1986. Phytochemical studies of the plants used in traditional medicine of Saudi Arabia. *Fitoterapia*. 57 (3):179-182.

36) Anis, M. and Iqbal, M. 1986. Antipyretic utility of some Indian plants in traditional medicine. *Fitoterapia*. 57 (1):52-55.

37) Sebastian, M.K. and Bhandari, M.M. 1984. Medico-ethno botany of Mount Abu, Rajasthan, India. *J. Ethnopharmacol*. 12 (2):223-230.

38) Herbalcureindia, http://www.herbalcureindia.com/herbs/arka.htm, downloaded on 17.11.2008

39) Kiss, R. 2005.*Extract with anti-tumor and anti-poisonous activity*. Unibioscreen S.A., Belgium (Pub no MXPA05003634 (A) dt. 14.12.2005; http://v3.espacenet.com, downloaded on 21.11.2008)

40) Wasuwat, S. 1967. *A list of Thai medicinal plants*. Research Report no.1, project 17 ASRCT, Bangkok. p. 22.

41) Siddiqui, M.B. and Husain, W. 1990. Traditional antidotes of snake poison. *Fitoterapia.* 61 (1):41-44.

42) Fitzgerald and Jamesina, A. 1999. *Methods for the prevention and treatment of gastrointestinal disorders*. The Procter & Gamble Company. (Pat no. 5932564 dt. 03.08.1999; http:// patft.uspto.gov, downloaded on 20.08.2008).

43) Cai, B.C., Nagasawa, T., Kadota, S., Hattori, M., Namba, T. and Kuraishi, Y.1996. Processing of Nux vomica. vii. Antinociceptive effects of crude alkaloids from the processed and unprocessed seeds of *Strychnos nux-vomica* in mice. *Biol. Pharm. Bull.* 19 (1):127-131.

44) Bhandary, M.J., Chandrashekar, K.R. and Kaveriappa, K.M. 1995. Medical ethnobotany of the Siddis of Uttara Kannada district, Karnataka, India. *J. Ethnopharmacol.*47 (3):149-158.

45) Natural standards, http://www.naturalstandard.com downloaded on 29.06.2008.

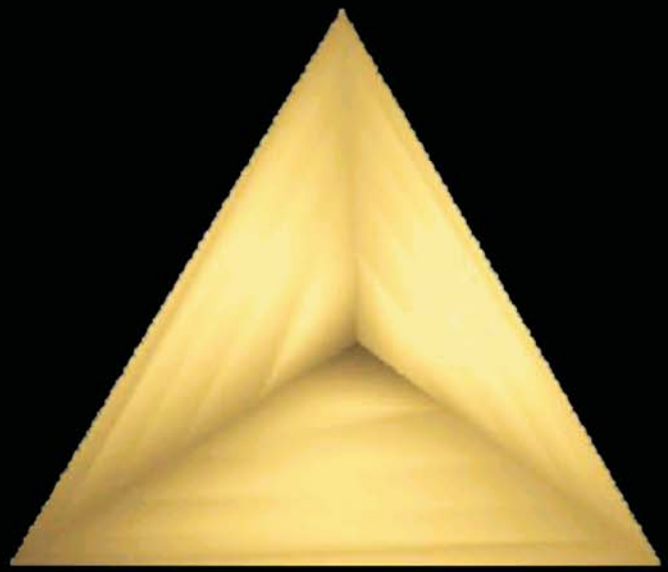
46) Jain, B.B. 2007. *A Process for manufacturing an herbal composition for relieving pain from joints and bones and herbal composition made thereof.* Thane, Maharashtra, India. (Publication number WO2008015697 dt. 07.02.2008; http://v3.espacenet.com downloaded on 19.12.2008).

47) Hozumi, T., Matsumoto, T., Ooyama, H., Namba, T., Shiraki, K., Hattori, M., Kurokawa, M. and Kadota, S.1995. *Antiviral agent containing crude drug*. Tokyo, Japan. (Pat no. 5411733 dt.02.05.1995; http://patft.uspto.gov downloaded on 19.12.2008).

48) Prajapati, N.D., Purohit, S.S., Sharma, A.K. and Kumar, T. 2007. *A Handbook of Medicinal Plants*. Jodhpur, Agrobios (India), Section-II, pp. 1-554.

49) http://pharmaceuticals.indiabizclub.com/catalog/123280~oils_(atharva_nirgundi_siddha_tail)~pune, dt. 04.08.2008.

50) Pushpangadan, P., Rao, Ch.V., Govindarajan, R., Ojha, S.K., Rawat, A.K.S., Reddy, G.D. and Mehrotra, S. 2008. *Anti-arthritic herbal composition and method thereof*. CSIR, New Delhi. (Pat no. 7338674 dt. 04.03.2008; http://patft.uspto.gov, downloaded on 25.08.2008).



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