

PART III

INNOVATIONS

for MAHARASHTRA

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





A. Muruganandam
Tamil Nadu

Sanitary Napkin Making Machine

Sanitary napkins, a universal 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 standard material 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 handing machine such that one can put a coin and get a pad. He has installed fifty units in seven states.



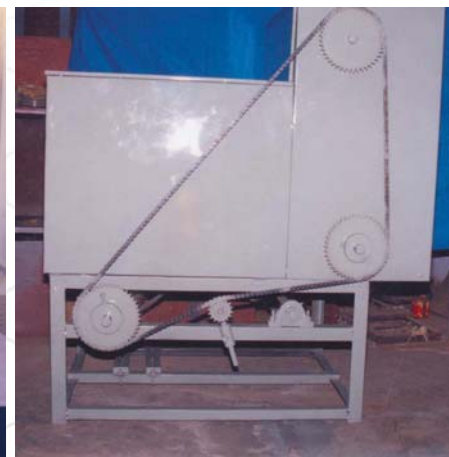
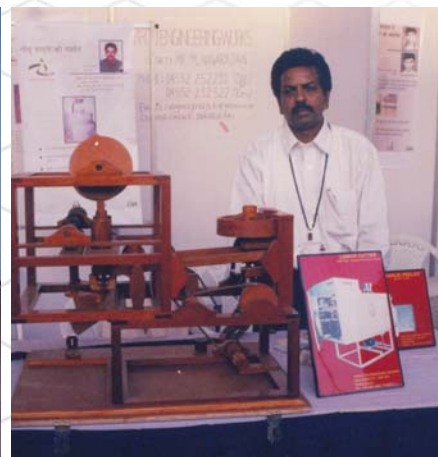
Garlic Peeling & Lemon Cutting Machine

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, needs 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 sizes. It can be operated by one person and cuts lemon into maximum eight pieces.



M. Nagarajan
Tamil Nadu





Raghav Gowda
Karnataka

Manual Milking Machine

Safe milking of cows is a requirement across rural India and this product is an efficient step in that direction. The product is a low cost, manually operated device that helps farmers to milk the animal hygienically and also reduce drudgery in the process.

It is easy to use with simple controls and can be easily operated by women as well. The creation of suction and low vacuum makes it suitable for other applications as well. Apart from the sales in different states in India, this machine has also been sold to Phillipines.



Maruti Jhoola- the Health Care Chair

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.



Sakrabhai Prajapati
Gujarat





N Sakthimainthan
Tamil Nadu

Hand Operated Water Lifting Device

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. It costs approximately two thousand rupees.



Mobile Operated Switch and Multi-media Poster

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 brilliant 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. 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.



Prem Singh Saini
Haryana





Yusuf Khan
Sikar, Rajasthan

Groundnut Digging Machine

Harvesting groundnut is a tedious process. While digging nuts 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, costly 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 out groundnuts from a hectare of field in one 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 has been supported under the 'Micro Venture Innovation Fund' of NIF for commercialising his innovation. In 2006, the technology was licensed to a Vizag based company called Ardee Hi-Tech Pvt. Ltd. This license was targeted for its application as a sea beach cleaner.

Power Generation Through Sewage

Energy agencies around the world are looking at solutions that harness alternate energy sources to generate electricity. The innovator has developed a system that achieves energy generation from sewage.

This arrangement is a system to generate electricity in which the slow moving sewage water is passed through a cylindrical drum. The helical blades inside the cylindrical drum provide desired efficiency to the system in generating power. The capacity of the existing pilot unit is 30 KVA. This technology can have a tremendous impact on the generation of power from low velocity, high volume discharge of effluents from industries and civil sewage processing plants.



K. Balakrishna
Karnataka





Madanlal Kumawat
Danta, Rajasthan

Improved Multicrop Thresher

Farmers across India require a reliable machine that achieves threshing with minimal grain breakage, clean output for a variety of crops. The innovator has developed a versatile thresher that can meet these needs.

The modified farm implement reduces setup time to less than 15 minutes to switch over from one crop to another, and achieves minimal breakage. Its latest variant can also handle groundnut apart from threshing other cereals and pulses.

The innovator has been supported with working capital needs of his enterprise under the *'Micro Venture Innovation Fund'* of NIF. More than a hundred farmers have bought his thresher.



Trench Digging Machine

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.



Radhey Shyam Tailor
Nathulal Jangid
Yusuf Khan
Sikar, Rajasthan





Prakash S Raghuvanshi
Uttar Pradesh

Kudrat 9- An Improved Variety of Wheat

The innovator believes that every farmer should get good quality seeds to deliver high yielding varieties of crops. He has developed a number of improved wheat, paddy, mustard and pigeon pea varieties, which are high yielding, robust stem, having bold seeds with good taste and resistance to major pests & diseases.

“Kudrat 9”, an improved wheat variety, developed by him using simple selection is quite popular among the farmers in different parts of Uttar Pradesh, Madhya Pradesh, Chattisgarh, Maharashtra, Rajasthan, Gujarat and some parts of Bihar, Haryana and Punjab. This variety bears large number of ear bearing tillers with lengthy spikes and has a hardy stem. The grain contains high protein and has great taste. The average yield of this variety is 55-60 quintals / hectares.



Bullet Santi-Motorcycle Based Multipurpose Plough

Like other drought prone regions, this region has severe labor shortage, few farm animals or mechanized implements to conduct farming operations. To address this need, the innovator designed a unique unit: the 'Bullet Santi'.

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 ploughing, 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 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'.



Mansukhbhai Jagani
Gujarat





Arvindhbai Patel
Gujarat

Auto Air Kick Pump

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 converts the compressor into an air pump. A pinch of polymer granules is also inserted to seal the leakage in the tube. The user can kick and fill air in the tube. This may last for a few kilometers to reach a pump repairing shop. An entrepreneur from Mumbai has licensed this technology and has sold more than 2500 pieces so far.



Unicool- The Natural Water Cooler

We already have refrigerators that operate on the principle of heat transfer and earthen pots that work on the principle of evaporation to cool water today. Arvindbhai has combined both features. In his natural water cooler, water is passed through cotton string covered copper coils, which are continuously being moistened by a dripper. Evaporation of water from lining on the coil cools the water inside. Cool water without electricity, isn't it a nice idea!

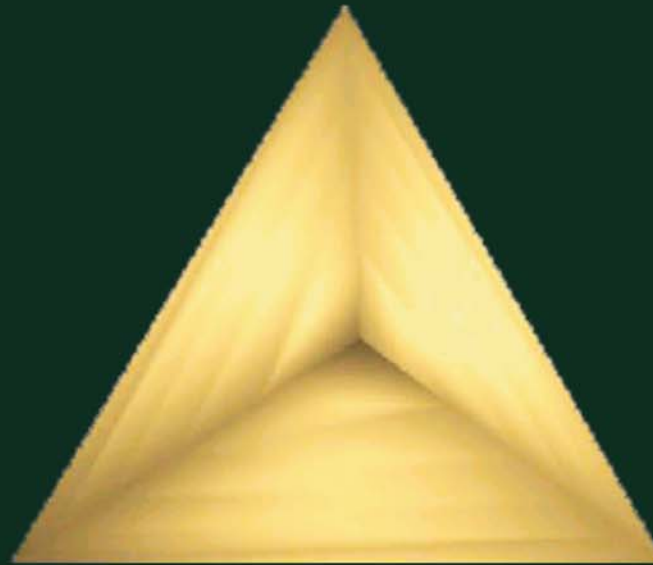


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Innovation



Investment

Enterprise



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