



THE BIG BUG SLAYER

It's the mother of all mosquito killers, trapping 1,000 bugs in a mere two hours. What's more, it is free of harmful chemicals, cost-effective and has a long shelf life. **BY BINITA SINGH**

That irritating buzz has always been a menace. Earlier it was malaria, encephalitis and filariasis that lurked threateningly. Post a monsoon downpour, a new enemy lurks in the soothing green potted plants, the puddle of water across the road or even that bucket of water stored in the bathroom to tide over perennial water woes—the deadly dengue causing *Aedes Aegypti* mosquito. As of now people are arming themselves with mosquito repellants, sprays, gels, electric racquets, mosquito nets, and homemade and Chinese remedies to buzz off the bugs.

But are these remedies really effective? And how eco-friendly, harmless and cost-effective are they in the long run? Not a lot as we all know.

MozziQuit may not yet ring a bell for many of us. Blame it on the lack of commercial hype that usually surrounds the launch of FMCG products. Yet, this mosquito trap is an award winning patented innovation by serial innovator Ignatius Orwin Noronha.

Fifty three year old Noronha is not a scientist by education or training. It is surprising then that this commerce graduate has such a keen knack for science and innovation. His career, in fact, began as an office assistant for a Cypriot Greek construction company in Bahrain where he worked for seven years. Thereafter, he moved to Saudi Arabia and worked for three years as Inventory Controller for a manufacturing company producing construction chemicals, fireproofing products and fertilisers as per the formulations of W. R. Grace & Co. of USA.

Noronha's foray into innovation started about this time. "As I got acquainted with the manufacturing of various construction chemicals, in March 1999, I manufactured waterproofing chemicals and executed waterproofing works of RCC roof slabs in Mangalore. It was observed that after

first monsoon complete leakage was arrested. Since the clients asked for 10 years guarantee against waterproofing works, I carried out limited works in subsequent years to monitor the results of waterproofing done for the required period," says the serial innovator.

The chemicals manufactured by Noronha were used in place of equivalent products of FOSROC India Ltd, to repair the deteriorated structure (container handling jetty) of JNPT Port, Mumbai, above the sea, with polymer modified mortar. The project was executed in the years 2000 to 2002, and is a standing testimony of more than 12 to 14 years to Noronha's practical innovation in manufactured chemicals of polymer modified mortar used for retrofitting works of container handling jetty, that cost less than international products like those of FOSROC. "The cost is much less as I do not have to pay any royalty or high administrative costs," says Noronha of his innovation.

In 2002, the idea of MozziQuit germinated in Noronha's mind when he came across Mosquito Magnet manufactured by American Biophysics Inc. of US, in Hyderabad, at their Indian distributor's facility. The mosquito repellent was outrageously priced at ₹1,10,000 (US\$ 1849.36) per unit with a monthly operating cost of ₹5,000 (US\$ 85.38), and used a hazardous chemical called Oct-o-nel. "This made me carry out R&D on an indigenous economical mosquito trap at affordable cost for Indians to eliminate mosquitoes," says Noronha of his initiative that led to the innovation of MozziQuit.

Noronha was ready with his first MozziQuit prototype by November 2002 despite receiving no support. "My first prototype cost me just ₹2,000 (US\$ 34.15) and attracted and trapped more than 1,000 live mosquitoes within two hours between 6 pm to 8 pm in the evening."

However Noronha was still struggling with high daily



Giant Killer: MozziQuit Max (left) and Mini (right) are all-purpose mosquito trappers as they can be used anywhere, in homes or cowsheds.



operating cost of ₹200 (US\$ 3.42) per day. “Since then I worked hard to bring down the operating cost to less than 5 paisa per day with excellent performance of trapping mosquitoes.”

It was after several years of persistence that MozziQuit attained commercial scale. Noronha matter-of-factly states

the reason, “Since there was no support from anyone for my R&D it took more than 12 years for me to release the product to market.”

For this particular innovation, it was a personal pain point that proved to be the inspiration for the serial inventor.

“I had made a resolution when I was just a small child, about five years old, to destroy mosquitoes. It was when my mother told me the cause for the swelling in one of her legs was due to mosquito bite (filaria).”

The product comes in two variants—high and low intensity. MQ-MAX, priced at ₹2,990 (US\$ 50.27), is

THE PRACTICAL INNOVATOR

In December 1999, Ignatius Orwin Noronha, approached IOCL with his innovative 4” thick fibrous concrete mix design which took just 24 hours of curing for the driveway of its petrol station at Goregaon East, Mumbai. The conventional 12” thick road concrete took 28 days of curing, and Noronha’s innovation promised cost saving in concrete material and labour amounting to 8” thick concrete besides the advantage of allowing movement of traffic 24 hours after concreting.

Since it was a totally new technology, the general manger of IOCL, a civil engineer, requested a 10”x10” sample size of cast on December 10, on which a three step test was conducted the next day. First, a water tanker with 10 tonne load capacity was run on it many times. Second, the same 10 tonne loaded tanker moved at high speed and applied brakes just above the sample concrete. The third test involved hitting the sample concrete with a hammer. As the sample concrete passed all tests, IOCL issued the work order in March 2000 and the work was completed in April 2000.

After more than 14 years of use, the road is a living testimony to Noronha’s extraordinarily strong, durable and cost saving innovation. It has been recognised by the government, and Noronha, at the invitation of Oscar Fernandes, the then Minister for Road Transport & Highways, gave a presentation on it to the senior officials of Indian Roads Congress, in January 2014.

The technology will save the exchequer more than ₹7.50 lakh crore (US\$ 126.09 billion) against the sanctioned 5 lakh kilometer road works to be concreted during the 12th Five Year Plan period.

Serial Innovator: Ignatius Orwin Noronha believes in finding practical low-cost solutions.

suitable for use in cowsheds, dog cages and houses where mosquito density is high. The operating cost of MQ-MAX is 15 paise per day for power equivalent to a zero watt bulb.

MQ-MINI, the low intensity mosquito trapper, is priced at ₹1,500 (US\$ 25.61) and is suitable to be used in houses and flats where mosquito density is low. The operating cost of MQ-MINI is 5 paise per day for power equivalent to 3 watts.

The products have longevity and last for more than 10 years unless physically damaged. Noronha says that the replacement cost of parts would be negligible even after five years of regular use.

Discussing the details of MozziQuit, Noronha explains, “Food grade proprietary additives are added to the plastic raw material, among the few components, while producing them through injection moulding machine. These additives in combination with light and temperature equivalent to body temperature which are generated by the MozziQuit, attract mosquitoes towards the trapping zone of the device. Once mosquitoes get attracted and start flying near the trapping zone of MozziQuit, they are vacuumed into the removable collection container through the instant killing zone of perforated holes. The dead mosquitoes are then collected in the removable collection container and can be disposed.”

The process patent for MozziQuit was granted to Noronha in May 2010. He has also received 11 Design Registration Certificates since 2009, which have been granted by the Indian Patent, Designs & Trademark office.

Though MozziQuit is yet to become a household name like other smaller commercial mosquito related products, Noronha has found considerable commercial success and is in the process of scaling his enterprise.

In Mangalore, as he claims, “Assistant Director of Veterinary Hospital/Animal Husbandry has issued a validation report confirming trapping of thousands of mosquitoes every day resulting in increase in milk yield as the cows get enough rest at night without mosquito menace.” This certificate was issued after testing MQ-MAX at various locations in and around Mangalore under the supervision of veterinary doctors and senior medical inspectors.

“We have completed test market on both the models,” the innovator adds, “and in fact, MQ-MINI has been redesigned based on the feedback received from the test market.”

Bolstered by the test market reception, Noronha is gung-ho about the next phase of the MozziQuit journey—the large scale commercial launch. “We expect to supply more than 10 million units in India to all the cow owners/farmers through the membership network of dairies at subsidised price as the central government is ready to release subsidy amount to all the states to support increase in production of milk,” says



AWARDS & ACCOLADES

- Gold Medal Award in DST-Lockheed Martin India Innovation Programme 2010
- ISA Best Electronic Product of the Year 2010 in the health-care category
- Approval issued by National Institute of Malaria Research after testing MozziQuit
- Validation from Assistant Director of Veterinary Hospital/Animal Husbandry after testing MozziQuit
- One of the six finalists in Samsung Innovation Quotient Season 2 held on August 17, 2012
- One of the 12 contestants of Bloomberg UTV's business reality TV show Pitch for ₹5 crore (US\$ 0.85 million)



the innovator entrepreneur.

MQ-MINI too is in great demand for use in flats and houses as mosquitoes are ubiquitous, says Noronha. He adds, “Our success lies in our innovative patented technology which provides maximum level of health protection to our customers.”

Comparing the benefits of MozziQuit with other models he says, “These mosquito traps are harmful to users as the UV radiation from the UV light installed in their traps is directly visible which causes skin cancer and affects eyesight. MozziQuit does not have any UV radiation.”

MozziQuit is being manufactured and marketed by Leowin Solutions Pvt Ltd. It is a private limited company that was established by Noronha with a vision to create an environment that is free of mosquitoes and to innovate, manufacture and market eco-friendly products. “Presently we manufacture and market MozziQuit MQ-MAX and MQ-MINI,” explains Noronha.

A great votary of research and innovation, Noronha says, “R&D enables companies to sustain in the market against competition. Social responsibility should be made mandatory for companies so that they encourage innovators to carry out research and innovation.”

Perhaps this would lead to more such cost-effective, green, consumer friendly products being innovated. ■