

Plant clinics in Karnataka, India

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N.S. Rao got interested in pest control during the Second World War. He was with the British army in Iran, sending *materiel* to Russia. The cargo had to be fumigated and most of the men were afraid of the poisonous gas, but Mr Rao was game, so he learned how to handle chemicals.

When Mr Rao got back to India he was shocked to see food being wasted to insect pests, while people went hungry, so he started a pest control shop in the southern state of Karnataka to sell insecticides to farmers. But many of the farmers were Jains, a religion with such a reverence for life that they will not kill even insects. Rats were eating their stored grain. Mr Rao offered to trap the rats and kill them, but the farmers wanted him to release the rats away from their farm. The shop eventually went broke.

Most businesses fail. But the people who try twice have the benefit of experience, and often do better the second time.

Mr. Rao went to work as the garden manager for one of India's large millionaires. For eight years he saved money and thought about business. Then he started Pest Control India Ltd (PCI). He started small, and with his brother worked day and night. The effort paid off. PCI now has 5,000 employees and 120 outlets across India, with major offices in Mumbai, Delhi, Chennai and Bangalore.

In 1981 Mr Rao started the BCRL (Bio-Control Research Laboratories). They now have 160 staff members, many with Ph.D.s, developing environmentally-friendly alternatives to chemicals, including sex pheromones (to attract insects and trap them), as well as the diseases (viruses, bacteria, fungi and even organic salts) that kill specific pest insects but are harmless to beneficial insects.



Jeff Bentley (left) and Mr. N. S. Rao, who founded Pest Control India

Mr Rao is now 92 and he still visits the offices and labs. BCRL is not the biggest money maker in PCI, but Mr Rao calls BCRL “the heart of the company.” He wants it to give something to society.

Dr. Malvika Chaudhary looks after the quality control at BCRL, which develops and manufactures sophisticated bio-control projects for sale. In 2008, Malvika was looking at clinics as a way of helping farmers diagnose plant problems, to encourage appropriate use of BCRL products.



Left to right, Malvika Chaudhary, M.S. Prabhakara and Usha Nandini

Malvika found a paper on plant clinics in Bangladesh, by Paula Kelly (Global Plant Clinic) on the web, and wrote to her. Eric Boa of the Global Plant Clinic met Malvika at a conference in Delhi, and later gave a course on plant clinics to BCRL. Malvika and colleagues started running plant clinics in 2009. They gradually began to think of the clinics more as part of their CSR (corporate social responsibility).

One bright Saturday morning in April, Dr. Malvika Chaudhary picked me up to show me BCRL. I was surprised to find the whole staff there. They work six days a week. Her one day off is Sunday, which she often spends with her colleagues running one of their four regular plant clinics. “I don’t think of it as work,” Malvika says. That’s how much she enjoys the clinics.

They have had many experiences with plant clinics, but are settling down to run the four, regular clinics. That is what they can handle, and do well, with all their other tasks. Malvika often goes to the clinics with the head of field research, M.S. Prabhakara, and Usha Nandini, technical officer at BCRL.

The BCRL plant clinics are held once a month.

First, they send one of the company extension agents out to the village. He puts up a banner at the clinic site, with the time and date. He tells some of the farmers about the clinic, and asks them to tell their neighbours.

On clinic day about three people usually come from BCRL. They do many things that people do at plant clinics everywhere. They have a sign. They fill out the clinic log (or register) and they write prescriptions. They keep a carbon copy of the prescription

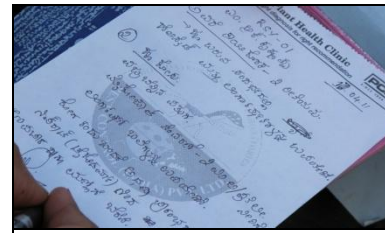


As in a plant clinic anywhere, experts give farmers individual attention. Mr Krishnappa tells Usha about his problems with bean pod borer

At first, the company extension agents were so excited, they ran around literally dragging farmers in. But Malvika stopped them. She only wants to see farmers who are motivated with real problems. Twelve or 15 farmers like that do come. Most bring samples of their plant problems.

The fieldwork has been good for the team. In two years of running plant clinics they have learned to identify many problems they did not recognize at first. They were able to take samples to a university in Bangalore which helped them identify tricky problems.

Now the BCRL people can identify most of the farmers' problems on the spot. Like the plant clinics worldwide, when the BCRL can identify a problem they give farmers a written and verbal recommendation then and there. But the team takes any problems they can't diagnose to the lab. For example, if a bean plant is killed by collar rot, it could be from fungi or bacteria, so the team takes a sample to their lab. Two days after they usually have a diagnosis, and they phone farmers on their cell phones and tell them the results.



The prescription form has lots of room for writing a full recommendation



Fungus or bacterium? Taking a sample of a rotten bean plant, with soil, for lab analysis



Usha explains information from the internet about grape management to Mr. Ashok



Taking a photo of a sample, including its code number, helps to keep a permanent record

But BCRL has also made many innovations in running plant clinics. For example, they keep a photo record of every sample. They write the sample's code on a slip of paper, put it on a neutral background with the sample, and take a picture. This forms part of their permanent record.

The team takes a laptop to the clinic and gets on the internet to look up more information for farmers.



Usha uses fact sheets to help give recommendations

The BCRL team also takes fact sheets to the clinic, and uses them there. This helps a lot. They explain the fact sheets to the farmers. That helps the team to remember the recommendation. If the farmers are interested, and most are, the plant doctors tell them more.

BCRL also takes a book of laminated photos to the clinic. If farmers have not brought a sample they can flip through the book until they find it. In the Yelakana farmers' market in Bangalore I watch a farmer look at the pictures until he finds the photo of the pest that is bothering his grapes. The staff recognizes it as thrips, and can give him the recommendation.

BCRL also does telephone follow up, of each farmer who visits the clinic. Two weeks later, BCRL technical officer Usha calls them and asks them about their experience. Did they apply the recommendation? Was it useful? Did it control the plant health problem?

BCRL enters all the data from the clinic register into a computerized data base (name, phone number, problem etc.). But it is getting to be so much work that she now needs a full-time person to do only this.

Plant clinics help researchers to learn about farmers' needs (and practical solutions). Head of field research, M.S. Prabhakara, says "I learn a lot (at the clinic), maybe more than the farmers. The clinics are an opportunity to systematically document everything, with photos, and to write fact sheets. I am empowering myself by working on these things."

The BCRL plant doctors recommend their own biological products (including the pheromones and salts) when possible, but as Prabhakara says, perhaps only 5 or 10% of farmers' plant health problems can be solved with these. There is much research to be done. The clinic recommends chemical control for problems which have no other solution.

Two weeks after holding the clinic, the team goes back and offers the farmers a demonstration on one of the problems that emerged from the previous clinic session.



A second Mr. Krishnappa finds a photo of the thrips insects that are bothering his grapes



Getting feedback from farmers over the phone