Photo: Jeffery Bentley

Many farmers turn up at easily accessible plant clinics. Here, Jorge Luis Perez Salgado exchanges ideas as to what the problem might be.

Plant clinics for healthy crops

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Although "plant clinics" have been known in the U.S. and other countries for some years, a whole network is now emerging in countries like Bolivia, Nicaragua and Bangladesh, responding to the efforts of both governmental agencies and NGOs. Most of these are supported by the Global Plant Clinic (GPC), an international service led by CABI in the U.K. These "clinics" are simple places, often little more than a table and some chairs, in a farmer-friendly place in a small town. They usually operate just a few hours a week, allowing busy staff to pursue their other responsibilities as well. The "plant doctors" are local extension workers or farmers; its clients are all those interested in discovering what is wrong with their crops, and what can be done about them. Drawing on examples from these three countries, this article presents the "plant clinic" strategy and the possibilities it brings.

Tomatoes in Nicaragua

In September, 2005, Róger Céspedes had a problem: his tomatoes were dying, and he didn't know why. He planned to sell the harvest of his small field to support his family, but this looked more and more difficult. Twenty days earlier, he had transplanted the tomato, but only two weeks later the leaves had started to curl in a way he had never seen before. As the tomato leaves curled and the tips turned yellow, Róger concluded that this was a new disease. He sprayed various insecticides and fungicides, several times, with no success.

In desperation he went to the *Puesto para Plantas*, the plant clinic in El Jícaro, northern Nicaragua. Agronomist Dimas Sarantes was sitting behind the table, in the shady porch of the Cooperativa Santiago, a community co-op which does banking, agricultural extension and which even owns a store. Dimas listened carefully as Róger described the disease. The symptoms were too general to diagnose, just wilting, so Dimas asked Róger to bring in a sample, which he did. This was then sent to the government plant pathology lab, where they confirmed that the disease was bacterial wilt. Dimas was not able to save Róger's crop, but he was able to give him valuable advice about crop rotation. He was also able to convince him that this particular crop was lost, and to stop wasting insecticides and fungicides on it. Later, Dimas discussed bacterial wilt and crop rotation over the radio, on his weekly agricultural talk show on local Radio Líder, FM 96.7 in El Jícaro, which is heard over four municipalities. From this single diagnosis, a few thousand smallholder farmers were able to benefit from the practical advice given over the radio.

The wilting tomatoes in El Jícaro showed that plant doctors do not know everything, and that they need to rely on others to receive samples and make further diagnoses. But it also shows that they do not simply tell the farmers what to do, but rather receive them, listen carefully and then give an opinion (most frequently a second opinion, as the farmer has already thought about his problem and probably already asked somebody else). The regular contact which is established between plant doctors and their clients helps them work together to solve a problem. More important, perhaps, is that it is the farmer who goes and asks, rather than passively receiving an extension agent. This empowers the farmer. Farmers rarely, if ever, bring in pests or diseases which they can readily identify. The plant clinic, therefore, complements other efforts.

Beans in Bangladesh

Four years ago, Abdur Rahim started farming in his father's land in Demajani, a village in the Bogra district, in central Bangladesh. In the summer of 2006 he sowed beans, in a similar way as he'd done before. Initially, growth was good, but just before flowering Rahim observed that about one quarter of all twigs were rotting. He went to a pesticide dealer and heard that he could use Volkan, very low graded fungicide. After six sprays the problem seemed to be over. A few weeks later, Rahim was happy to find purple flowers and bunches of young beans. But the same disease attacked again, and this time it was more aggressive. Rahim returned to the dealer, who prescribed the same fungicide. Rahim wanted a second opinion. He was annoyed about the frequency and cost of spraying – and it hadn't worked.

Rural Plant Clinic 1, organised by the government's Rural Development Agency, is close to Rahim's village, but he had never gone to it nor shown any interest in it. He admits now that he felt "slightly allergic", as this clinic is run by female plant doctors. The problems he was facing made him think differently: "at least I should see what is happening". So he went to the plant doctors, watched and listened to other people getting and giving advice, and at the end of the morning asked for help with his bean disease. Their response was immediate: they should go and see the beans, the same day. The group involved farmer neighbours, the plant doctor and the Assistant Agriculture Officer. They confirmed the disease as a fungal infection, and after a long discussion, they suggested using Mancozeb, a fungicide which had to be sprayed only twice at an interval of 5 days. One month later Rahim returned to the plant clinic, carrying a big jute bag full of freshly harvested beans, which he gave as a gift to the plant doctor Piyera Begun and her colleague Anjuara.

In Demajani, as in many other rural areas, the plant doctors are not always agronomists. They may be village women who receive moral support and backstopping from agronomists. The women plant doctors are locally elected municipal leaders, who feel that the clinics give them an added opportunity to advance the development of their community. A similar example has been seen in Vietnam, where villagers are organising themselves to become "tree nurses", ready to report any problem which might arise.

Table 1. A network of plant clinics

Country	Number	Started	Managed by
Bangladesh	22	2004	RDA Bogra, AAS and Shushilan
Bolivia	6	early 2004	CIAT/Santa Cruz, Proinpa and UMSS
D.R. Congo	8	March 2006	Université Catholique du Graben, Butembo
India	2	August 2006	GB Pant University of Agriculture and Technology
Nicaragua	13	March 2005	Farmer organizations, NGOs and INTA. Support network: Funica, Promipac, Cnea, INTA and Dgpsa-Magfor. Funded by ASPS II (DANIDA), IFAD and other donors
Uganda	3	July 2006	Socadido, SG2000, Caritas and MAAIF
Total	**54**		

Experimenting in Bolivia

In August 2006, Virgilio Trujillo, a farmer in his fifties strode into the plant clinic organised by the San Simón University in the Chapare region, Bolivia. He came with a leaf from an orange tree. It was turning yellow, and he asked what was wrong with it. Virgilio has a large orchard, and all of the trees were turning yellow, except for two which were yielding fruit. He had concluded that "the land is all the same, so the difference must be in the plants."

The plant doctor, agronomist Fredy Almendras, listened carefully and looked at the leaf again, noticing how it was turning yellow between the veins, while the veins were still green, as though the plant was not getting enough nutrients. He also saw little flecks of algae on it, and realised that it was an old leaf. There was nothing really wrong with it, so he suggested paying attention to the soil. Virgilio almost lost his patience. He explained again that the problem was in the trees and not in the soil, because the soil was all the same, and because two trees were doing fine. So the plant doctor said that maybe the soil seemed all the same, but perhaps there was a little difference in the spots where those two trees were thriving.

Virgilio was listening, but didn't seem convinced. The plant doctor thought that a solution could be to prune back all the trees, and fertilize them, but he knew from experience that the man might be reluctant to practice such drastic advice. So he recommended an experiment to diagnose the problem, which the two men discussed thoroughly. "Take two branches from the orange trees that are producing well. Graft those branches into two other trees. If they still bear fruit, it means that the trouble is in the trees. Take two other trees that are not doing well, and fertilize them. If they start to bear fruit it means that the problem was in the soil." Virgilio left, obviously pleased with this advice: a practical experiment he could do on his own.

Conclusions

Conventional extension works with groups or individuals, often selected by an agency, and most of the other villagers do not receive attention. With plant clinics, any member of the community can get a diagnosis and advice. The farmers are in control of when to come to the clinic and when to leave. Some of the plant doctors are farmers themselves. One does not have to know everything to be a plant doctor, but it helps to be a good listener, and to be linked into a network that can share samples and information between farmers, agronomists, researchers and labs.

Having a successful plant clinic does not take much money. You do need a comfortable spot in a farmer-friendly place. It is important to be at the same place every week, at the same time. Books and photographs help people to talk about their plant problems, but you do not need a microscope or other fancy equipment. Have a sign or banner in the local language. Encourage people to bring in samples of unhealthy plants. A plant doctor often learns as much by listening to people as by looking at the symptoms. Only by listening can you learn that the plant may have been over-watered, damaged by herbicide, or may be receiving too much sun (or too much shade). Solutions are then easier to find. ■

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