The “Permanent Crop Clinic Programme” in Sri Lanka: making data of use to solve crop health problems.

M.U.P. Jayasundara

1 Plant Protection Service of the Department of Agriculture; 2 CABI Plantwise

Abstract

"Permanent Crop Clinic" (PCC) concept has been introduced to Sri Lanka in 2009 as a pilot project in selected districts. With promising results, Department of Agriculture decided to expand the programme throughout the island from 2012 onwards. The main objective of the PCC is to provide better advice on pest management to farmers whenever they bring in Integrated Pest Management (IPM) techniques. PCC is conducted by Plant Doctors (Agriculture Inspectors) at permanent places, and the date and time of the clinic will be informed to farmers through posters, SMS, and at farmer organization meetings. At the PCC, the plant doctor makes a diagnosis after observing a sample brought by farmers and the farmer will receive a written prescription. A copy of the prescription is sent to the plant protection service of DOA and data management staff upload its content onto the Plantwise online data management system (POMS) to develop a database from which researchers, extensionists and policy makers can draw information on the crop pest situation in Sri Lanka. The data also allows programme managers to monitor activities and identify training needs, so that plant doctors can increase their knowledge and the quality of diagnoses and advice can be improved in future.

Introduction

Since the operational area of an Agricultural Instructor (AI) is quite big in Sri Lanka, he/she faces difficulties in providing his service to all farmers especially during the main cropping seasons. The “Permanent Crop Clinic” (PCC) concept can be the best solution for this where farmers can meet AI (Plant Doctor) on a pre-planned day and in a pre-planned place, convenient for both parties, to discuss their plant health problems. This is a widely accepted concept and at present, there are 34 countries in the world that use the crop clinic model, supported by CABI’s Plantwise programme, to resolve farmer problems (CABI, 2016). The “Permanent Crop Clinic” concept was introduced to Sri Lanka in 2009 as a pilot programme in selected districts (Bandara and Kulatunga, 2014). With the positive results of the pilot programme the DOA decided to expand the PCC throughout the island in 2012. There, Agriculture Inspectors (AIs) of the extension wing of the DOA have been trained initially on the wide concept of identification of plant problems (insect pests, diseases and nutritional problems) and their management. These AIs are then called "Plant Doctors" who run the Crop Clinics.

When we feel queasy, we visit a doctor in a clinic. The doctor discusses our symptoms and a diagnosis will be made. We will be given a prescription, or simply advised on lifestyle change to improve our health. The same concept is used in PCC. When crops are in health, farmers bring samples to the PCC and based on symptoms observed in the sample and the information drawn from the farmer, the Plant Doctor makes a diagnosis. At PCC farmers are given a prescription which carries advice on how to manage the problem. Since 2013 the information recorded in prescriptions is uploaded into a web-based database (POMS) after harmonization, and trained volunteers can check the quality of diagnoses and advice. Scientists or extensionists officers involved in crop clinic activities in respective countries can use these data in decision making. Further, these data can indicate major crops and major plant health problems in specific areas, research needs, training needs of plant doctors and farmers, and performance of individual plant doctors. Currently over 6,500 prescription records are uploaded to the POMS database and available to permitted users through an access-controlled website. By now nearly 750 plant doctors are trained and 394 crop clinics are in operation where farmers receive correct diagnosis and appropriate advice to manage their crop health problems. As the Sri Lankan government is looking for ways to reduce pesticide usage in Sri Lanka, Plant Doctors are encouraged to introduce Integrated Pest Management techniques whenever possible which are useful to ongoing season or next season (Bandara and Kulatunga, 2014). This is encouraged through two ways: 1) training of plant doctors, and 2) development and distribution of extension materials called “green and yellow lists” (sometimes called “aid management decision guides” or PMDGs) which document methods of prevention, monitoring and direct control. The data collected at the clinics can be used to identify training needs and to identify topics for new PMDGs to be developed, according to the crops and pests being seen at the clinics. Crop clinics are scheduled to be held on fixed days, times and permanent places as health human clinics. Farmers can bring their ailing crop samples for diagnosis and get advice on management options while safeguarding the environment and human health. If necessary, plant doctors can arrange field visits, to make better diagnoses and recommendations. If a plant doctor is not sure what the problem is he can send a sample to the nearest diagnostic laboratory for advice.

Materials and methods

Uploaded pest management recommendations in the POMS database are evaluated based on different categories in Nuwara Eliya and Anuradhapura districts. These two districts were selected as examples for this analysis because the plant clinics are very active in these districts, resulting in more than 500 records of data in POMS, allowing some useful data analysis and comparisons of trends. A total of 576 records were analysed from Anuradhapura district, coming from 262 clinic sessions held in 48 different AI ranges across the district. A total of 846 records were analysed from Nuwara Eliya district, coming from 336 clinic sessions held in 16 different AI ranges across the district.

Results and Discussion

The PCC helps farmers to solve their crop problems at the correct time while developing a strong link between AIs and farmers. PCC is a tool to overcome the problems associated with incorrect advice given by pesticides dealers and friends which will cost farmers money and time. In the meantime, PCC can be used to reduce misuse of pesticides and regulate the pesticide usage in Sri Lanka.

We have analyzed the data in Anuradhapura and Nuwara Eliya districts from April 2012 to April 2016. Here the top crops and top pests have been reported in each district (figures 1 and 2). Other crops (e.g. rice) and pests (e.g. insects) are not considered in the analysis. In Anuradhapura, 340 different pest problems were described, whereas in Nuwara Eliya, 441 different pest problems were identified. The most common pest in Anuradhapura was virus of beans. This indicates that more training programmes need to be held in the future to empower farmers on management of plant diseases, and also more training is needed for plant doctors to provide more specific diagnoses and advice.

We have found that, as expected, different crops are brought to the clinics in the two different districts. This is because Nuwara Eliya is a vegetable growing area whereas Anuradhapura is a district where climatic conditions are suitable for rice and leguminous cultivation. It also shows that in both districts most of the farmers who attend the clinics are men. This may be because most of men are involved in farming rather than women who involved in household activities.

According to the given recommendations by plant doctors (figures 3 and 4), while they recommend some chemical options, the most common type of recommendations were cultural methods and monitoring. Also, the numbers of total recommendations exceeds the numbers of queries brought to the clinics (e.g. 982 recommendations were provided for 578 problems in Anuradhapura) which indicates that plant doctors are providing multiple management recommendations for each problem. Both of these factors promotes Integrated Pest Management (IPM) to solve plant health problems. In comparison, if farmers meet pesticide dealers or other farmers who live nearby, they usually receive only chemical remedies.

Conclusion

The PCC helps farmers to solve their crop problems at the correct time while developing a strong link between AIs and farmers. PCC is a tool to overcome the problems associated with incorrect advice given by pesticides dealers and friends which will cost farmers’ money and time. In the meantime, PCC can be used to reduce misuse of pesticides and regulate the pesticide usage in Sri Lanka.

These analyses demonstrate that the Plantwise Online Management System (POMS) is a key tool for data management and programme monitoring, allowing permitted users to access data collected at the crop-clinics, indicating key trends in pest occurrence and identifying the quality of advice given by plant doctors and any necessary training needs.


References