

Chapter 8

Resources for Trainers

To be an effective trainer, you should ensure you are familiar with the manual content before planning and carrying out PHC training. The resources in Chapter 8 provide some background on being a good trainer, and guide you through the important material in the manual for you to use in your preparation.

8.1 Being a good plant health clinic trainer

Good training of plant health doctors is essential for plant health clinics to be effective. Good trainers are confident about both what to teach and how to teach, and they work to develop a non-threatening and stimulating learning environment.

8.1.1 Become confident about what to teach

Good trainers continually build on their understanding of pests, diseases and nutrient deficiencies, and how to go about diagnosing and controlling them. There is no substitute for practical experience and lifelong learning. You should try to spend a lot of time in gardens and farms with your hand lens and the Pacific Pests, Pathogens & Weeds app on your phone to become familiar with plant pests, diseases and nutrient deficiencies, as they actually appear in the field, as well as talking to farmers and extension staff. This is the best way to develop experience and expertise in diagnosis.

Visits to the field will help you decide whether a problem is caused by a pest or disease or has another cause (poor soil, nutrient deficiencies, dry conditions, water logging, etc.), in other words, whether it is A, B or C, as in Section 2.1 of the manual. Finding out what others think about the problem and what they have done about it is also very helpful and important.

8.1.2 Become confident about how to teach

Even if you have excellent knowledge of plant pests and diseases, to help others learn you need to understand something about how learning takes place. It is not enough to just give a lecture with slides. Some people might learn well that way, but others do not. All human beings naturally enjoy learning to make sense of their world but, unlike children, adult learners already have a lot of knowledge and skills to share with each other, and usually they learn best when they are interested and motivated. Adults expect to be able to learn from each other, as well as the trainer, and respect each other's experience, self-worth and knowledge.

Usually, adults learn best in small groups, so they can discuss ideas together, but there should also be time for people to work alone, or for you to teach the whole class together. The exercises in the manual use a range of teaching strategies designed to help your trainees to become actively engaged in their learning.

8.2 Developing a non-threatening and stimulating learning environment

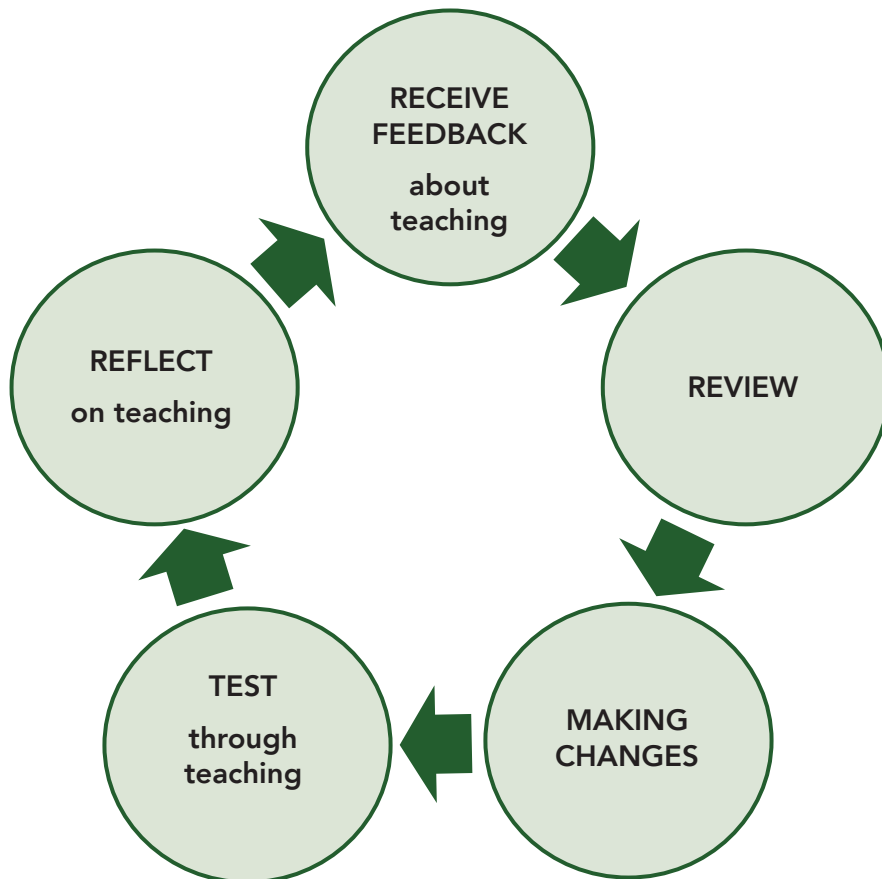
Good trainers work hard to develop strong relationships with their plant health doctor trainees. This has a major impact on your trainees' ability to learn and become confident. Learning takes place best in a safe, non-judgemental and supportive learning environment, where people do not feel foolish if they don't understand something or make mistakes. Rather, they see that making mistakes is an important part of learning, and they should not be afraid to share their mistakes and failures as well as their successes. Neither you nor your trainees should worry about admitting when you don't know or understand something. None of us knows everything, however long we have been working; there is always something new to learn! But you should make an effort to find out what you don't know. Think of yourself as a lifelong learner, always looking for opportunities to learn more.

As you go through the training program, try to become aware of the diversity of the trainees in your class — their backgrounds, gender, age, the languages they speak, their own knowledge and experience, and how they like to learn best.

8.3 Reflecting on your work

Trainers will always improve if they take the time to reflect on their teaching and learning. Feedback from trainees can be in the form of listening to their discussions and answers, and making sure you ask plenty of questions to check their understanding. The learning/teaching process is a cycle that never ends, the aim is to reflect on what has been learned, and to know what to do for continuous improvement (Fig. 8.1).

Fig. 8.1 The reflective learning cycle — it never ends. *Source: authors.*



8.4 What trainers say about the qualities of a good trainer

When they were asked to list the qualities of a good trainer, the regional trainers reviewing and testing the manual came up with the qualities listed below (Table 8.1).

Table 8.1 What plant health clinic trainers say about the qualities of a good trainer.

Qualities of a good trainer	
Know your subject	Planning
<ul style="list-style-type: none"> ▪ be well-educated about the topics ▪ have a high level of confidence 	<ul style="list-style-type: none"> ▪ plan well ▪ prepare well
Communication	Personal qualities
<ul style="list-style-type: none"> ▪ be a good listener ▪ understand the audience ▪ speak the audience's language ▪ communicate well with the audience ▪ ensure training materials match the audience's level of understanding 	<ul style="list-style-type: none"> ▪ have empathy ▪ have a positive attitude ▪ be approachable ▪ be friendly and patient ▪ show commitment ▪ be a good role model ▪ be able to build good relationships ▪ be active

8.5 Teaching strategies for effective learning

Research has given us a lot of knowledge about how people learn that can help us develop effective learning across the different cultures in our regional PHC network. Teaching something new so that people understand it well is complex, and no single way of teaching works for all people. We know that learning for deep understanding involves making new nerve pathways in the brain, and this requires effort and practice. Learning is not a spectator sport! We also know that people make sense of the world by integrating new knowledge with what they already know. Sometimes this may lead to misconceptions, such as thinking lightning causes dieback, or that a variegated plant has a viral disease. Trainers should be on the lookout for misconceptions about pests and diseases.

Because people learn in different ways, we need to use a range of teaching approaches. Here are some useful teaching strategies that are used throughout the manual.

- small group discussion
- brainstorming in small or large groups
- drawing and writing
- lectures with PowerPoint
- creating a concept map
- drawing a diagram or a cartoon

- filling in a table
- looking at pictures/photos
- giving instructions to follow
- practical work e.g.
 - farm, garden and market observations
 - collecting and examining samples from the garden or farm
 - carrying out experiments
 - making up home-made pesticides
 - preparing samples to send away for diagnosis
- role play and simulation
 - interviewing farmers and others
 - simulation of a PHC
 - role playing a process, e.g. the life cycle of a pest
- cause and effects diagram
- reflection, planning and retesting
- creating reports and photosheets about a pest or disease
- quizzes.

8.5.1 Small group discussion

In general, discussion with a partner or in a small group is a very good way to help your trainees to develop new understanding. In a small group, people feel free to ask questions that they might not want to ask in front of a large class, and are more likely to share ideas with others. Having an expert and resources available to answer questions further helps their learning, so make sure you visit each group to check how they are going and whether they need any help.

8.5.2 Brainstorming

Brainstorming is a good method for finding out what your trainees understand before you teach a topic. It is also useful for starting to think about the topic. Begin by asking for ideas on a topic, and write down every idea without saying whether they are right or wrong, then discuss the ideas with the class. This allows the trainees to realise they already have some knowledge, and this will help build their confidence.

8.5.3 Drawing and writing

Drawing and writing are useful methods that assist people to learn, as well as helping you as the trainer to assess your trainees' understanding. For example, you might ask your trainees to draw their ideas of a life cycle, write down a definition of pests and diseases, or list methods of control.

8.5.4 Concept/mind mapping

Concept mapping is a powerful tool for both learning about and assessing your trainees' understanding of relationships between important concepts. This is best done in pairs or a small group, and requires real effort, as the trainees have to discuss in depth how they understand these relationships. The concepts are written on small pieces of paper, card or post-it notes and stuck on a large piece of brown paper with blu-tak or sticky tape. The pieces of paper can be moved around till the group is satisfied with the arrangement. Then words describing the relationships between the concepts are written on lines or described orally (Figs 8.2 and 8.3).

You can give your trainees the concepts to explore or ask them to come up with their own. Around eight to ten concepts is a good number, but you can add more or use fewer, depending on the group. It is best to start with a simple map, using everyday examples, e.g. house, mother, garden, chicken, taro, child, so that people understand the process.

Always give your trainees plenty of time to develop their maps, as the time spent in discussion is when the learning takes place.

Fig. 8.2 A concept map linking insect, pest, mite, fungus, pathogen, disease, taro, crop, leafspot, virus, nematode, bacteria (created in Solomon Islands).
Source: authors.

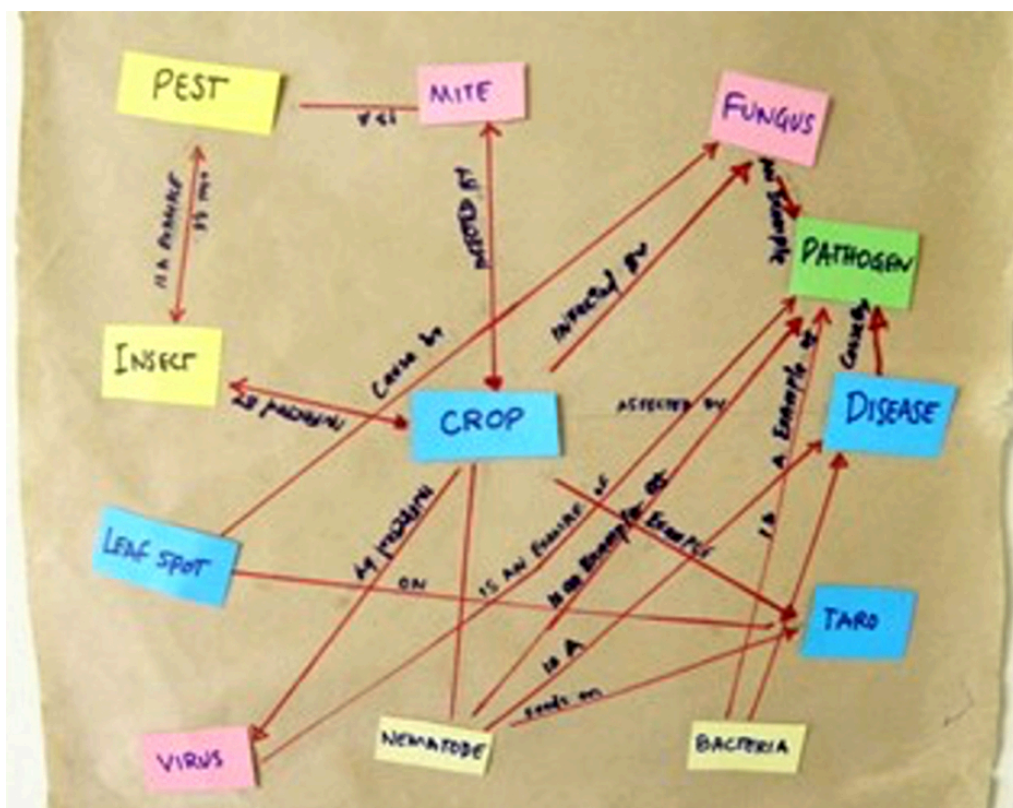
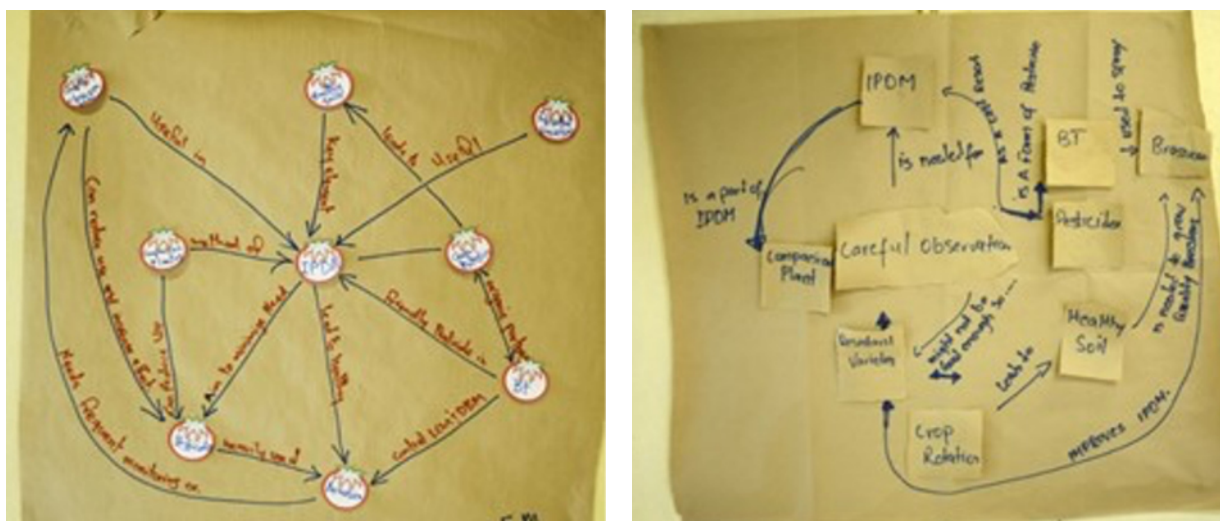


Fig. 8.3 Concept maps linking IPDM, companion plants, pesticides, Bt, resistant varieties, healthy soil, brassicas, crop rotation and careful observation (created in Tonga). *Source: authors.*



8.5.5 Filling in a table

Your plant health doctor trainees can deepen their understanding of any topic by filling in missing words in a table after discussion in pairs or small groups. This method is used widely in the training manual.

8.5.6 Practical work

Hands-on practical experience is extremely important for becoming a good plant health doctor. Your trainees cannot learn just from pictures in training manuals, videos or online apps. Practical work includes observing and examining samples from the field using a hand lens (and a binocular microscope if available), carrying out experiments such as on soil in Chapter 3, and discussing in depth what they might be observing using the A, B, or C and possible/probable diagnostic process. They also need practical experience in preparing samples to send away for identification, making up sprays, using sprayers.

8.5.7 Role-play and simulation

Role-play is a very useful method of learning, where your trainees can work together to explore and develop their understanding of a concept or process through acting. A good role play tries to put in as much detail as possible. People can even dress up! For example, you can role-play the life cycle of an insect.

Role-play can also be used to try out or simulate something you want to do in 'real life', e.g. working with farmers. Exercises in Chapters 6 and 7 ask your trainees to set up and run a clinic, and play the roles of plant health doctors and farmers. This allows them to experience and reflect on the process of preparing and running a clinic, and to make any changes they need before running a real one.

8.5.8 Cause and effects diagram

By thinking about cause and effect, this method is designed to help trainees to explore the immediate and long-term effects of a concept or problem over time, in order to trace out its overall importance. They need to think about the effect of each item in the diagram, so they can see the overall impact of the concept or problem (i.e., the 'big picture').

Ask your trainees to draw a template with concentric circles as shown in Fig. 8.4. The concept or problem to be explored is written in the centre of the diagram, and the effects of this are explored and written down in the next circle going outwards. These then become the causes for the next circle and so on. More circles can be added if needed.

Fig. 8.4 Cause and effects diagram showing the possible effects of crop pests and diseases. *Source: authors.*

