Session 13: NATURAL PESTICIDES

Objectives

1. To know how to prepare and use natural products for the control of pests and diseases.

2. Use natural pesticides to spray a crop. Observe its effects.

Prepare pesticides in groups and you save on time
Common pests

Which pests and diseases do you have problems with in your area? How do you normally control the pests? Can you identify pests below?

Home-made pesticides

How to control pests and diseases

As a farmer you know that the production of high quality crops and high yields depend on the protection given to the crops from pests and diseases. For the past 50 years, synthetic chemicals have been used in control of pests and diseases. The use of some of these chemicals has not only been found to be ineffective in some cases but also dangerous and destructive to humans and other organisms.
1. What is your comment on the illustrations below? Have you used any of them before?

2. Have you seen any good predators die or have you felt any negative effects while using them when spraying?

Avoid using synthetic pesticides
Using plant-derived pesticides is an old control method. Using natural pesticides is cheap and does not make farmers dependent on external inputs. However, some natural pesticides can also be toxic for humans and animals. Beneficial insects or predators (insects that eat other insects) may also be killed and this tends to lead to more serious pest problems later. Natural pesticides should be used as a last resort, and only when absolutely necessary.

This means that we should first of all use various control methods such as:
• Planting with correct crop spacing to allow air to move freely between plants. When leaves dry quickly, it limits the spread of fungal diseases.
• Rotating crops from different families that do not share pests and diseases.
• Practice hygiene by not composting diseased plants and maintaining the field and gardens clean.

If you still have problems with pests and diseases you may try using natural pesticides. Below you may read about some pests and their natural pesticides. You will also find instructions on how to extract and use these natural pesticides. As with all pesticides, care should always be taken while preparing, using and cleaning up the extract. One should always avoid touching it and breathing it in while it is being applied.
How to prepare natural pesticides

**Against termites, citrus aphids and red spider mites**

Tephrosia contains an ideal pesticide because it breaks down in seven days or even less in bright sunlight. It is effective against insect pests like termites, citrus aphids and red spider mites. The most effective concentration for killing insects is 200 grams of crushed leaves for every litre of water. Soak the leaves for a period of 2 hours in a bucket. Place the bucket in shade as sunlight gradually breaks down the desired chemicals. Filter the liquid to prevent the small particles from blocking the nozzles of the sprayer. When spraying, it is important that the extract has contact with the pests. If the pest is on the underside of the leaves you must spray underneath and actually hit the pest. A second spray might be needed, especially if there is heavy infestation.

**Against caterpillars**

Chilli and garlic extracts can be sprayed to control caterpillars. Stir one thoroughly crushed or finely grated garlic bulb with one teaspoon of powdered chilli peppers into 2 litres of hot water. Let the water cool and stand for about one hour. Filter the liquid. Add a little soft soap and stir well.
Against insects in general

Chilli, garlic and onions extract is a good spray for insects in general. Chop or grind one garlic bulb, one onion, one tablespoon of hot pepper and mix with one litre water. Let it stand for one hour. Filter the liquid and add one tablespoon of liquid soap.

Chilli, garlic and onion

1. Chop onion.
2. Grind garlic.
3. Mix with water.
4. Filter and add soap.

Against cabbage worm

Garlic and tephrosia extract may help you get rid of worms. Pound the fresh leaves of tephrosia and a garlic bulb with a small amount of water into a paste. Mix 50 grams of paste with one litre of water and filter. Apply weekly from one week after emergence or transplanting until two weeks before harvesting.
1. What natural remedies do you know for the control of pests and diseases? Make a list and share recipes.

2. Which ones have you used successfully?

3. Are these natural remedies widely used?

4. If not, how can their use be increased?