

I.

Product Knowledge

Topic 10e

Organic Pesticides

FACT SHEET

I. Product knowledge

Topic 10e: Organic Pesticides

Organic pesticides are pesticides where the active ingredient is not synthetically manufactured, but derived from natural sources.

Being organic does **not** mean that an organic pesticide is not poisonous. There are some plants and organisms that are highly toxic to living organisms. It is important to treat organic pesticides exactly the same as synthetic pesticides, including:

- Read the label very carefully and follow label directions.
- Protect yourself during handling organic pesticides. Even those products that are nontoxic can be irritating to skin, eyes, and mucous membranes.
- Only use recommended pesticide and dosage.
- Do not reuse pesticide bottles.

Organic pesticides have several advantages and disadvantages as compared to synthetic pesticides:

Advantages	Disadvantages
<ul style="list-style-type: none">• Not harmful to humans• Less toxic to mammals• Quicker degradation• Environmentally friendly• No residue• Cheap• Locally available	<ul style="list-style-type: none">• Labor intensive• Sometimes bulky before processed• Temperature and light sensitive• Host specific (selective). Others are broad spectrum• Can also, like chemical pesticides, burn or stress plants• Slow acting

The Use of Organic Pesticides

Organic farmers control pests with non-chemical controls like pest traps, using pest resistant seeds, and biological control, preventive measures such as crop design and layout, mechanical methods. Only if prevention is not sufficient, natural pesticides should be applied. This differs with conventional, chemical farming practices; it gives fast and effective reduction of pest damage but can be dangerous to humans.



There are several kinds of organic pesticides:

Name	Source	Type	Controlling	Remarks
Bio pesticides eg. Bt. (<i>Bacillus thuringiensis</i>)	Pesticides containing living organisms, Effective Micro-organisms	Host specific that releases toxins in target insect after being eaten by the insect	Insects	Very selective that works only on certain insect species. Safe to humans and animals
Insecticide soaps eg. Potassium bicarbonate, liquid soaps (not all)	Natural salts combined with fatty acids.	Contact insecticide that disrupts insect cells	Insects/ Fungi	Very safe and no residue. Use carefully because some plants are sensitive to it
Horticultural/ Insecticide oils eg. Paraffin oil, Cottonseed oil and Soybean oil	Plants oils or mineral oils	Suffocates insects and disrupts insect's feeding	Insects	Basically no toxicity to humans
Botanical pesticides eg. Neem (<i>Azadirachtin</i>), Pyrethrum	extracts of plants	Broad spectrum insecticide/ Upsets the insect's hormonal system and prevents it from developing to its mature stage	Insects	Non-toxic to humans. Washes away in rain. Breaks down in sunlight
Some synthetic pesticides eg. Funguran (copper hydroxide), Nordox (copper oxide)	Basic copper	Kills spores by disrupting function of enzymes	Fungi/ diseases	Mostly synthetic but those in class III and above could be used with permission

INSTRUCTIONS

I. Product knowledge

Topic 10e: Organic Pesticides

Materials needed

- Flip-sheet board with flip-sheets
- Markers (4 black, 1 blue, 1 green, 1 red)
- Masking tape
- Colored cards

Time needed: 30 minutes

Preparations:

- Flip-sheet with the heading *Organic pesticides*
- Flip-sheet with the definition: ***Organic pesticides are pesticides where the active ingredient and inert are not synthetically manufactured, but derived from natural sources.***
- Set of colored cards with words:
 - *Organic pesticides*
 - *Chemical pesticides*
- Flip-sheet with the heading *Advantages* and a flip-sheet with the heading *Disadvantages*
- Plastic container with samples of:
 - Neem seed (extract)
 - Paraffin oil
 - Liquid soap
 - BT Bacteria
 - Potassium bicarbonate
 - Chemical pesticides (Confidor 200SL)

Each container should have a clear label with its content.

Note: Do not go into too much detail. If people have specific questions, ask them to come to you during the break to discuss. This exercise is just to give them an idea of different organic pesticides.

Set up

- Attention:** Tell the participants that not all pesticides are chemical (synthetic). There are also natural pesticides we call organic.
- Title:** Tell participants the title while showing the flip-sheet with the title: *Organic pesticides*.
- Credibility:** Explain your experience in organic pesticides.
- Objectives:** To explain what an organic pesticide is and to introduce the most commonly used organic pesticides.
- Benefits:** Some agro dealers are afraid that organic pesticides are taking away their business. However, if you can advise your customers on organic pesticides as well, they will take you more seriously and definitely come to you when they would like to buy chemicals.
- Direction:** During this session, we will only introduce organic pesticides and will not discuss each type in detail.

Delivery

Explanation, Demonstration, Exercise, and Guidance:

1. Ask the participants what **organic pesticide** is. Lead them to a definition of: Organic pesticides are pesticides where the active ingredient is not synthetically manufactured, but derived from natural sources.
2. Tell participants that we need to treat organic pesticides in the same way as chemicals because some organic pesticides can be **poisonous** as well. Therefore, they should always read the label and protect themselves.
3. Ask the groups if they can give any **example** of organic pesticides. Make sure pesticides depicted in the table below are mentioned. If they mention other types, you can add them. If many are added, ask which are the most commonly used, and only add those. Make sure to have not more than eight different pesticides.
4. Divide the participants the same number of groups as there are organic pesticides. Give each group one pesticide. Each group has to discuss what the **source** is, the **type**, and what it is **controlling**. Let the groups write the results on flip-sheets.
5. Discuss the **results**. Let the groups paste their flip-sheet on the wall one by one. Let them not present their results (that will take too much time) but read the results out loud. Ask if other groups agree. Make sure all pesticides that are listed in the table in the fact sheet are mentioned.

6. Conclude the session by mentioning a few advantages and disadvantages of organic pesticides. Make sure that all advantages and disadvantages mentioned in the table in the fact sheet are mentioned.
7. When all answers are listed, repeat all of the advantages and disadvantages and let them mention some examples.
8. Show participants samples of the organic pesticides example neem seeds or leaves. Pass them around to clearly show them to everyone.

Finish

Summary: Mention the organic pesticides that were discussed and what pest they control.

Questions: Ask if anyone has a question or comment.

Evaluation: Ask them the difference between organic pesticides and chemical pesticides. Ask them to give an example of an organic pesticide. Ask them why it is important to read the label and protect ourselves when we work with organic pesticides.

Next step: In this session, we learned about organic pesticides. Next time a customer comes, they will be prepared for any question.

Distribute the **fact sheet** to all participants.