

Pesticides: Safe and Effective Use

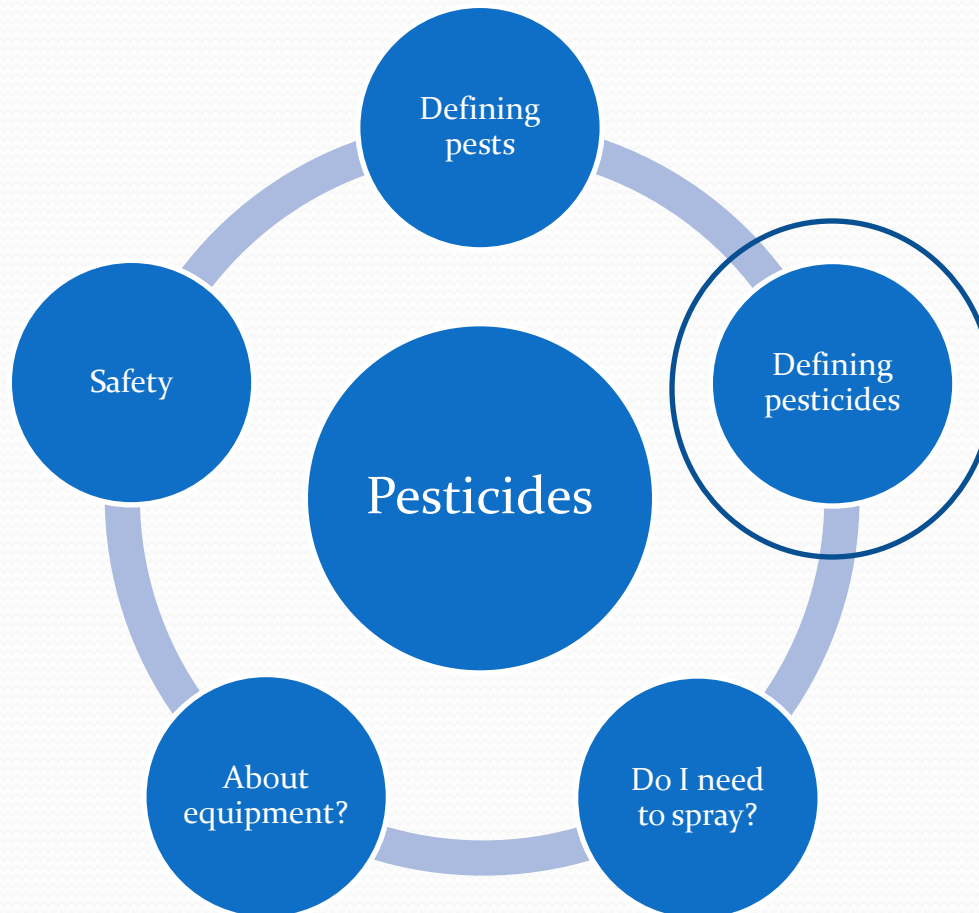
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and Tom Brown



Course objectives

- Know key points in the application and safe use of pesticides
- Note: At the end, participants will take a review quiz to show they can recall all the key points.
- Support materials – fact sheets and check lists, review quiz,

Course structure



Defining Pesticides

- What is a pesticide?
- A pesticide is any material (natural, organic, or synthetic) used to control, prevent, kill, suppress, or repel pests.



Defining Pesticides



Match the pesticide with... what it controls...

- | | | |
|-----------------|---|--------------------|
| • Insecticides | → | • Diseases |
| • Herbicides | → | • Insects |
| • Fungicides | → | • Weeds |
| • Rodenticides | → | • Snails and slugs |
| • Miticides | → | • Rats and mice |
| • Molluscicides | → | • Mite |



Defining Pesticides

- Will different pesticides control other types of pests?
 - For example, will a herbicide control insects?
 - Almost never!

Defining Pesticides

- If you have more than one type of problem pest (say a disease and an insect), can you mix pesticides?
 - Sometimes, but read the label
 - Many times mixing products will mean products do not work



Defining Pesticides

- "Pesticides" come in different forms. The most common are:
 - Water soluble (WS)
 - Emulsifiable concentrates (EC)
 - Wettable powders (WP)

Defining Pesticides

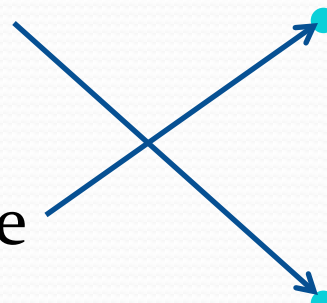
- Which requires constant agitation in the tank?
 - Water soluble
 - ✓ ● Emulsifiable concentrates
 - ✓ ● Wettable powders
- Why?
 - Because they separate out of solution
- What happens if they separate out of solution?
 - Uneven chemical application – uneven control
 - Unhappy customers!

Defining Pesticides

- Which causes greater nozzle wear?
 - Water soluble
 - Emulsifiable concentrates
 - ✓ • Wettable powders

Defining Pesticides

Match the following:

- 
- Contact pesticide
 - Systemic pesticide
 - Moves through the plant to have its effect.
 - Must hit the target pest or coat the plant being protected. Requires complete coverage of the plant for best effect.

Defining Pesticides

- What is the difference between a selective and a non-selective herbicide?
- A non-selective herbicide
 - Kills all weeds (and the crop!)
- A Selective herbicide....
 - Kills certain weeds in certain crops

Defining Pesticides

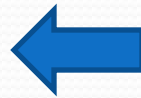
- What was used here – a selective or a non-selective herbicide?
- A Selective herbicide....
 - has only affected the weed – not the crop



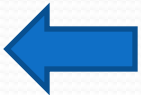

Defining Pesticides

What is LD₅₀?

- LD₅₀ tells about the toxicity or danger of a product to humans and animals.
- LD₅₀ is the dose required to kill half a non-target population of animals (usually rats).
- Which is safer?
 - Product A LD₅₀ = 750
 - Product B LD₅₀ = 1750
- Why?
 - Because more of product B is required to have the same toxic effect.
- Aim to use products with an LD₅₀ of more than 1000.



Defining Pesticides

- All products carry key “signal” words on the label telling about the potential dangers of a product
- Look for
 - Caution 
 - Warning
 - Danger 
- Which do you think is most dangerous?
- Which is least dangerous?