

PROMOTION OF IPM AS A FORM OF MANAGING THREATS TO POLLINATORS

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Lecture outline

- 1. Definition of Integrated Pest Management (IPM)**
- 2. Methods of pest management:**
 - **Cultural control**
 - **Biological control**
 - **Genetic/Interference /reproductive**
 - **Mechanical and physical control**
 - **Host plant resistance (varietal control)**
 - **Legal control**
 - **Chemical control**
 - **How can IPM help protect pollinators?**

What is integrated pest management?

- Integrated Pest Management (IPM) is an ecosystem approach to crop production and protection that **combines different** management strategies and practices to grow healthy crops and minimize the use of pesticides.
- Deliberate integration of different methods to complement each other and minimize harmful effects in the environment

METHODS OF PEST MANAGEMENT

1. Cultural control

- Cultivation techniques
- Adjustment of crop diversity or crop pattern
- Adjustment of irrigation and fertilizer applications
- Use of barrier crops
- General crop hygiene
- Manipulation of harvesting procedures
- Manipulation or destruction of alternate hosts
- Rotation
- Location of crops
- Trap crops
- Intercropping
- Clean culture

(Continue)

2. Biological control

- Classical control- introduction of parasite or predator
- Inoculative- repeat introduction or augmentation of natural enemies
- Inundative- repeated inoculations
- Preservation of natural enemies
- Use of pathogens (bacteria, fungi, viruses)

(Continue)

3. Genetic/Interference /reproductive

- Use of behavior modifying chemicals (pheromones)
- Use of insect hormones (juvenile hormones, moulting hormones
- Use of anti-feedants, repellants or attractants
- Release of sterile insects
- Chemosterilants
- Genetic manipulation

(Continue)

4. Mechanical and physical control

- Mechanical- handpicking, screens, barriers, sticky traps and shading devices
- Physical- use of electricity, sound waves, infra-red rays, x-rays, light, sound equipment, dehydration equipment, airtight (hermetic storage), electro-magnetic energy, abrasive dust

(Continue)

5. Host plant resistance (varietal control)

- highly resistance,
- low resistance,
- susceptible,
- highly susceptible,
- tolerant varieties

(Continue)

6. Legal control

- Plant quarantine
- Eradication and control
- Export certification, terminal inspection and
- Plant inspection (Kenya Plant Protection act)
- Phytosanitary certificates (FAO international plant protection convention of 10=951)

(Control)

7. Chemical control

- Use of selective pesticides
- Selective use of pesticides- timing in relation to pest and natural enemy populations, plant growth and/or meteorological factors
- Selective application techniques
- Dosage rate
- Protect against pest insects based on observations
- Stimulate natural enemies of pest insects
- Use insecticides as “last resort”

Works for:

- Crops without “zero tolerance” (damage thresholds)
- Pests below threshold?- No spraying/Delayed spraying
- Natural enemies present-Insecticide free zone/Specific insecticides

How can IPM help protect pollinators?

- IPM protects pollinators by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.
- IPM is a way of preventing unacceptable levels of pest damage by the most economical means, while posing the least possible risk to people, property, resources, and the environment, including pollinators.
- Establish “action thresholds” at which point a management strategy will be implemented to reduce the pest population.

IPM (Continue)

- Use of synthetic pesticides (chemicals), within IPM, should only be used at minimum levels and judiciously. This implies that they need to be used at the right period when the target pest population requires such an action to lower the numbers to uneconomic levels, and such that the application itself minimizes the negative impact to non-targets such as pollinators.
- Taking the time to learn about the chemical, its formulation, how to apply the appropriate amount and apply it correctly are worth it for pollinators,

THANK YOU

END