Grade 5-6: Integrated Pest Management

National Science Standard
Personal and Social Perspectives: Science and technology in local challenges

Objectives:
The student will

1. chart the process of pest management using a flow chart.

Background
Pesticides were introduced in the 1950's. In the past 50 plus years many advances have been made to make the use of pesticides safer and more environmentally sound. A farmer will only benefit from conscientious use of pesticides. A healthy environment sustains agricultural production and the livestock and humans living there. A degraded environment with depleted soil resources, poor water and air quality and destroyed wildlife habitat does not.

Farmers use **Integrated Pest Management** (IPM). This is a systematic approach that combines several different practices to control pests.

Before treatment is deemed necessary, IPM involves:

1. Proper identification: Not all insects are pests; some are natural predators that help control pest species. Only treat pests that damage crops.
2. Monitor pest levels: Rather than routine administration of insecticides, IPM uses scouting practices to detect pests and determine if action in needed. A farmer will actually walk the fields and determine the number of pests per determined area.
3. Determine Pest Threshold Levels: To justify treatment pest damage has to exceed a threshold. Thresholds have been developed as the result of many years of research.

Once a pest problem is identified, IPM treatment involves balancing treatment with effects on beneficial organisms, the environment with crop yields. The process involves the following tactics:

1. Use Biological means such as introducing natural pest predators (ladybugs are an example)
2. Use physical means such as barriers or traps.
3. Use chemical means. The pesticide used is specific to the pest identified and applied at the lowest effective rate. The pesticide should be short lived in the environment, least toxic to good organisms, and alternated with other chemical agents to prevent development of resistant pest populations.

To prevent a reoccurrence of a pest infestation IPM involves considering changes for the next year's planting to prevent a repeat of the problem.

1. Planting time: Sometimes a farmer can plant a crop so that it does not coincide with the pest's lifecycle.
2. Crop Rotation: Plant a different crop that is not susceptible to the same pests.
3. Genetic options: If available, choose a plant resistant to the pest

Word Power

- Pest (n): any insect or animal that causes damage to a crop that will result in a significant decrease in yield to cause a monetary loss.
- Integrated Pest Management: A systematic approach to pest control that uses a combination of multiple different practices.

Activity 1
Integrated Pest Management is a process. A flow chart makes it easier to follow and understand a process or a sequence of events. Have the student flow chart the process for IPM.

Integrated Pest Management