



Integrated Pest Management

A curriculum module for high school science classes

from Toxic Free NC, www.ToxicFreeNC.org

Core Learning Questions

I. How can we apply scientific methods of observation, research, experimentation, risk and cost/benefit analysis to decision making about real-life problems, such as pest management?

(scientific inquiry and science-based decision making, plant & insect biology, risk analysis, disease vectors, sustainable agriculture)

- a. What is a pest? What kinds of species are pests? What are their roles in the natural ecosystem? Why do they become pests?
- b. What are pesticides? What are some different classes of pesticide chemicals, and how do they function? What different ways are they used? What are some of the risks and benefits of their use?
- c. What are scientific approaches to managing pest populations? What are the costs and benefits - economic, environmental, human health, or other - of different methods of pest control?

II. How do everyday decisions about pest management affect the environment, and how does the environment affect our health?

- a. What is environmental health?
- b. How do pesticides and other pollutants get into our environment, and from there, how do they get into our bodies? (pollution sources, routes of exposure)
- c. How can pesticides and other pollutants affect the way our bodies function? (toxicology, cholinesterase inhibition, endocrine disruption, bioaccumulation)
- d. Why are children more vulnerable to health damage from pesticides and other pollutants in the environment than adults? (routes of exposure, teratogens, developmental biology)
- e. How can risks to human health and the environment be represented in pest management decision making?

III. What are effective ways we can work for pest management practices in our communities that best protect human health and the environment? (Civic participation, resolving environmental challenges)

- a. Who makes decisions about pesticide use and pest management in our daily environments?
- b. What are the priorities considered when making decisions about pesticide use and pest management - economic, health & safety, cosmetic, environmental, or other?
- c. How might decisions about pest management in our daily environments affect us? How can we affect the way those decisions are made? What are effective ways to communicate with decision makers about this?