

We Have What You Want!

Lesson 5

In the 21st century, consumers are driving the market towards items grown and built in more environmentally friendly ways. It is the perfect time to give them what they want. In this lesson, students will design advertisements educating the public about IPM and the dangers of pesticide use, while promoting the use of IPM in raising the greenhouse crops.

Suggested Level(s):

Grades 9-12

Subject(s):

Environment & Ecology; Reading, Writing, Speaking and Listening, Economics

Standards:

Environment & Ecology:

4.3 Environmental Health

4.5 Integrated Pest Management

Reading, Writing, Speaking & Listening:

1.5 Quality of Writing

1.6 Speaking and Listening

1.8 Research

Economics:

6.2 Markets & the Functions of Government

Skills:

Researching, Synthesizing and Creating, Comparing and Contrasting

Technology Connection:

Presentation Software, Graphics Software, Digital/Video Cameras, Internet Resources

Materials:

Paper

Pencil/Pen

Advertisement supplies* (crayons, markers, video equipment, digital camera, poster board, construction paper, glue, scissors, etc)

Time Consideration:

Multiple class periods

Objective(s):

Students will

- determine who are the main consumers of their greenhouse products
- research environmental and health hazards associated with pesticide use and exposure
- create advertisements showcasing the IPM techniques used in the greenhouse and their benefits
- compare and contrast greenhouse sale data from current and previous years

Assessment Opportunities:

Create a well-organized, complete greenhouse IPM report using information gathered in each of the 5 lessons. A possible outline for the report may include:

- **Introduction:** (what is IPM, what are the steps, why is it important to use IPM, environmental and health affects of pesticide use)
- **Pest Identification:** (difference between a pest and a beneficial organism, written description of how student identified organisms found in greenhouse and what was found. Include notes taken during the ID process and cheat sheet made from information)
- **Monitoring:** (describe what pest was monitored and how that was done. Include data sheets and other pertinent record keeping papers)
- **Bio-control:** (define economic threshold, bio-control options for the assigned pest, cost-benefit analysis of using bio-controls, recommendations)
- **Marketing:** (how were products marketed to consumers, how did sales compare to other years, how did the current products compare to other years, what was profit?)
- **Conclusion:** (summarize the greenhouse IPM project, what worked well, what didn't work well, what would be changed/tried if doing it again)

Background:

In today's market, consumers are becoming increasingly interested in how their food is grown and what impacts the food production system are making on the environment. News reports and stories about the health and safety of our food supply abound while word spreads of different food item recalls due to illness or concern. As the time comes to market the plants grown in the greenhouse,

emphasizing the use of integrated pest management offers the chance to educate consumers about safer, more environmentally sound growing practices.

Using integrated pest management practices in a greenhouse setting, whether at a school or a commercial greenhouse, or in an agricultural field setting has benefits that many consumers are unaware of. Unfortunately, the majority of the public is unfamiliar with IPM in general. While there are several grocery store products available with IPM labeling, consumers are less likely to purchase them because they have never heard of IPM or don't understand it. Educating the public about IPM and what it means to purchase an IPM product is an important step in increasing the demand for IPM products.

Looking at the benefits of IPM, the most obvious is probably the decreased level of pesticide residue found directly on fruits and vegetables. Decreased levels of pesticides used on fruits and vegetables means decreased exposure to pesticides for the consumer. In addition to minimizing pesticide exposure for the consumer, the use of IPM practices can dramatically reduce pesticide exposure to those individuals working in the greenhouse or the agricultural fields. IPM creates a safer, healthier work environment for those responsible for growing our food supply. For the last two decades, researchers have begun to study possible connections between pesticide use and exposure and the common health problems seen in today's society including asthma, birth defects, cancer, learning disabilities, and reproductive issues. (For more information about these connections, please refer to the Greenhouse Curriculum Introduction and the resources found there.)

Integrated pest management practices also benefit the environment. IPM reduces the potential for air, soil, and water contamination. It helps protect non-target species like birds, mammals, fish, and beneficial insects and can improve wildlife habitat and biodiversity. It promotes environmental sustainability and leads to short- and long-term positive effects on environmental health. As a consumer, purchasing an IPM product supports environmental stewardship and tells the grower you care about how the product is grown.

Economically speaking, IPM is a sound approach to managing pests. The cost of weekly or monthly routine spraying is not part of an IPM plan. Intervention and management of a pest comes when it hits a specific threshold level, which has the potential to lower costs to the grower. The use of IPM practices can also result in healthier plants and higher quality products to be sold.

Growers using IPM practices and the individuals talking directly with the consumers should be educating the public about IPM and why it's important to support IPM practices. Promote IPM and practices used in the greenhouse in a variety of advertisements designed to entice and educate the public. Talk one on one with the public so they can continue to make educated consumer choices.

Getting Ready:

1. Explore possible avenues students can take to advertise greenhouse products in the surrounding area. Modify the list of ideas given in Step 3 accordingly.
2. Gather information about previous sales of the greenhouse's products and costs of pest management for previous years. Make information available to students for Step 4.

Doing the Activity:

1. As a class, determine who are the main consumers of the greenhouse products grown.
 - Are they homeowners, businesses, students at school, etc?
 - Brainstorm what is important to the consumers when purchasing a product. (price, environmental impact of growing procedures, health of the plant, etc)

2. ↩ Building on the discussions from Lesson 1, have students research environmental hazards and effects as well as human health issues associated with pesticide use and exposure. Focus on information that will:
 - Educate the consumers about pesticide use and the harmful effects associated with it (soil, water, air pollution, health problems that workers growing the plants may experience, acute/chronic effects of pesticide exposure, etc.)
 - Promote the use of IPM techniques in the greenhouse (reduce environmental and human health problems, healthier plants, worker safety, etc.)
3. ↩ Either as individuals, in pairs, or in small groups, have students synthesize information learned and create different advertisements to educate the school and public about IPM and about the IPM techniques used in the greenhouse.
 - Advertise to the school and the public through presentations, announcements, fliers, posters, brochures, newspaper ads or articles, commercials, jingles or PSAs for the radio, etc.
 - Include information researched in step 2 in the advertisements and when talking with customers about the products they buy.
 - Advertisements should reflect key talking points students will be using when interacting with consumers.
4. After greenhouse products are sold, have students compare and contrast current year's sales data to previous years.
 - Was this year more successful than other years in sales? Hypothesize why or why not.
 - Was this year's pest management more cost effective than previous years?
 - How did consumers react to the advertisements and information about IPM techniques used in the greenhouse?

Enrichment Activities:

1. Develop a survey for consumers. Possible ideas:
 - How many of them have heard of IPM before
 - What advertisement strategy reached them
 - Why it is important to them to buy items grown using environmentally friendly techniques
 - How will the information about IPM change other purchasing choices

Reading Connection:

“Three Simple Ways to Market Any Product: How to Develop an Effective Marketing Plan” by Nina Vultaggio. <http://www.suite101.com/content/three-simple-ways-to-market-any-product-a111842> (accessed on 9/8/10)

Marketing your Product (101 for Small Business) by Donald Cyr and Douglas Gray.

- Paperback: 192 pages
- Publisher: Self Council Press (September, 2009)
- ISBN-10: 1551808595
- ISBN-13: 978-1551808598