

Environmental Degradation and Pesticides



Outline

- Importance of our environment
- What is environmental degradation?
- Water
- Air
- Harm or loss of beneficial insects
- Conclusions

Importance of our environment

- This is where we live, work, and play
- Provides resources for
 - Food and fuel production
 - Water supplies
 - Recreational activities
 - Other creatures live here
- Iowa has laws in place to protect the environment from careless and damaging activities
- We should seek to protect the place we live regardless of whether or not it is the law



Environmental benefits of pesticides

- Preserve habitat by increasing crop production on farm land
- Manage erosion by enabling no-till
- Manage invasive pest organisms



What is environmental degradation?

- Degradation occurs when a part of the environment in which we live is damaged or polluted in some way.
- Pesticides can contaminate water sources, the air we breathe, and harm animals such as bees that are beneficial to human beings.
- Contamination can make resources less usable or even dangerous to use.

Water

- People depend on water for drinking, growing food, transportation, recreation, etc.
- Ground water and surface water can both be contaminated by pesticides



Ground Water

- Pollution occurs from
 - Pesticides leaching through soil
 - Old wells
 - Agricultural drainage wells
- Explore other options of pest management before using pesticides

Surface Water

- Polluted by
 - Drift and nearby pesticide sprays
 - Rain washing pesticides into waterways
- Contamination prevented by limiting pesticide use and following label directions

Air

- Pesticide drift occurs when pesticides are windblown from the target area.
- Particle and vapor are two kinds of pesticide drift.
- Volatile organic compounds result from some pesticides that can react with other compounds and form ozone.

Particle and vapor drift

- Particle drift occurs when a pesticide moves through the air as droplets during application.
- Vapor drift occurs when applied pesticides volatilize, or turn into fumes and move through the air.
- Can harm other plants, injure people or animals, and pollute surface water
- Follow label, apply during suitable weather, and use appropriate sprayer settings

Beneficial insects

- Beneficial insects are helpful insects!
- They eat pest insects and can pollinate fruits and other plants (honey bees).
- Beneficial insects can be harmed by insecticides and be killed along with the pests.



Honey bees

- Honey bees pollinate many kinds of plants and produce honey.
- Pesticides can harm bee colonies.
- Approximately 1 million colonies per year in the U.S. are damaged or killed.
- Iowa has a law that protects bees from harmful pesticides.



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Conclusions

- Pesticides are an important tool in modern agriculture.
- Consider how pesticides could harm the environment before you apply them.
- Follow the label for correct application methods.
- Consider alternative management options.
- Be safe and watch out for the safety of people, animals, and the place where you live.