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Practical Tips for Pesticide Education

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Abstract: Extension can provide factual information to assist clients in understanding products that are and are not considered pesticides. This article describes how to interpret whether or not a product is a pesticide based on intent of the manufacturer and product claims. Finally, a handout is presented for Extension personnel to use when introducing the concept of pesticide education. Extension personnel can provide leadership to the issue of pesticide education, as well as decouple the terms "toxicity" and "pesticide."

Introduction

This article presents examples and practical tips for explaining the concept of pesticide as a legal construct. Several Extension programs relate directly and indirectly to pesticide understanding and use. Because program participants from diversified audiences differ widely in their comprehension of pesticide issues, Extension educators have a tremendous opportunity and challenge in this highly controversial area (Whitford, 1993).

Pesticides are a legal construct defined in the Federal Insecticide, Fungicide, Rodenticide Act, commonly known as FIFRA, which is legislation that regulates the sale, distribution, and use of pesticides (Brown et al., 2001). A pesticide is a substance or mixture of substances that is used to prevent, destroy, repel, or mitigate any pest (Environmental Protection Agency, 2009). Therefore, we come into contact with many types of pesticides everyday, though conventional wisdom may tell you otherwise.

The term "pesticide" is often confused with "toxicity." These terms can be connected, but toxicity has nothing to do with defining a product as a pesticide. Many herbicides are less harmful than many everyday household products (Ferrell, Fishel, MacDonald, Rainbolt, & Sellers, 2007). Research by Litovitz and Manoguerra (1992) demonstrated that alkaline drain cleaners had a higher hazard factor than insecticides/pesticides. Drain cleaner is clearly toxic, and more so than some pesticides, but it is not considered a pesticide.

Intent for Use

Pesticides are defined not in terms of the inherent characteristics of particular substances, but rather in terms of the intent underlying the use of a substance (Brown et al., 2001). Let's take a look at multi-purpose household cleaners, could those be pesticides? The answer is "yes," but only if the product claims to disinfect, sanitize, or reduce microbial growth. If your household cleaner has an Environmental Protection Agency Registration Number (commonly abbreviated as EPA Reg. No.) on the product label, then it is considered a pesticide and subject to the pesticide regulatory process.

Antibacterial soaps are an example of legal construct. Antibacterial soaps are intended to destroy or lessen the presence of bacteria, often marketed as "kills germs." However, because the intended use is on humans and the products make a health-related claim, those products are considered drugs and regulated by Food and Drug Administration (FDA). If the antibacterial were intended to be used as an antibacterial on your bathroom sink, then the product would be considered a pesticide and regulated by the EPA. This is due to statutory language in FIFRA exempting products such as antibacterial soap if used on humans from being labeled pesticides. This rationale encompasses such things as hand-sanitizers and antibiotics, as well as other similar products used on humans as well as animals.

As stated, the definition is based on the anticipated intended use as dictated by the company or person that puts the product on the market. Some have used household vinegar (5% acetic acid) for weed control as a herbicide. Research has shown that household vinegar can provide 98 and 100% control of black nightshade and velvetleaf, respectively, at 4 weeks after treatment (Abouziena, Omar, Sharma, & Singh, 2009). But household vinegar manufacturers do not intend their product to be used a pesticide. Therefore, household vinegar is not considered a pesticide even though it can kill certain weeds.

More Than Just Insects and Toxicity

Take the example of a custodian sanitizing bathrooms in an office building with a mildew sanitizer. In this example, the custodian is applying pesticides. The misconception in this example is that applying pesticides involves only controlling insects. Applying pesticides can indeed dictate that you are applying a product to control insects, but applying a pesticide can also signify that you are applying a product to reduce microbial growth.

As stated before, the pesticide must be acting on a pest, which is also defined in FIFRA. Pests include insects, mice and other animals, plants, microorganisms such as viruses and bacteria, as well as prions (think Mad Cow Disease). As you can see, the term "pests" can be expansive. Even the title of the act includes "Insecticide," "Fungicide," and "Rodenticide," so it is obviously more than just insects.

Pesticide Education: Examples

A one-page handout has been developed that can be disseminated to an Extension participant group for introducing the concept of pesticide as a legal construct (Table 1). Blank out the "Pesticide?" column in Table 1, as that column provides practical application and tips the instructor can convey to the audience. Trade names have been removed.

Table 1.

Common Household Productsâ Are They Pesticides?

Product	Pesticide?
Home-Use Weed Kill	**Yes.** This product is marketed to kill weeds. It is considered a herbicide.
Lawn Fertilizer, analysis 12-12-12	**No.** Fertilizers are not considered pesticides.
Lawn Weed 'n Feed, analysis 12-12-12	**Yes.** The weed control portion of this product makes the entire product a pesticide.
Pool Chlorine	**Yes.** Known as an antimicrobial pesticide, this product is intended to kill bacteria and control algae.
Drain Opener	**No.** Although highly toxic with skull and crossbones on the label, these products are not pesticides.
Toilet Bowl Cleaner with Disinfectant	**Yes.** This product is intended to kill bacteria and microorganisms.
Dog, Cat, Animal Repellant	**Yes.** If the product canister states anywhere 'repels animals', it is a pesticide.
Hand Sanitizer, Kills 99.9% Germs	**No.** Even though this product clearly is intended to kill microorganisms, its intended use is on humans. The product is classified as a drug and regulated by the FDA. Interesting to note: if the same product were marketed as a bathroom sanitizer, it would be considered a pesticide.
Mosquito Repellent	**Yes.** If the spray claims to repel or control mosquitoes, it is a pesticide.
Laundry Detergents	**No.** Generally marketed to 'freshen and clean' these products are not pesticides, unless the container specifically mentions killing microorganisms/bacteria.

Conclusion

Pesticides are a legal construct in the United States. The factor in defining product as a pesticide is intent, as provided by the company placing the product onto the market. Claims of a products' ability to repel, destroy, prevent, or mitigate some pest is the typical first step on the defining of a pesticide. There is also a check to see if the product acts on a pest that is found on or in humans and animals, as well as a few other exemptions as are found within FIFRA. This is the analysis, which is created by a statute (legal construct), that will indicate the legal status of a product as a pesticide.

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