

examinetics

Occupational Health Pathfinder

Overview

Pesticides are simply agents or substances used to control, repel or kill pests. Pests are living organisms (eg microbes, bacteria, vermin, insects and weeds) that are considered a nuisance or are not wanted because they cause harm (disease or illness) to humans or other animals, destroy crops and compete for food or space. Pesticides tend to be categorized according to the pest that they are designed to control, repel or kill. For example, herbicides are used to control plants, insecticides for insects and fungicides to control molds and fungi. The nature of pesticides is wide and varied but they are designed to be toxic to the organism that they are working against. In agriculture and horticulture, pesticides are used so that crop and commercial plants are grown with increased productivity.

Health hazards associated with pesticide use

It is estimated that there are around 10,000-20,000 physician-reported poisonings of agricultural workers annually in the US (US Environmental Protection Agency; EPA). The health affects of pesticides on humans depends on their type (chemical or biological in nature) and the length of exposure. One class of pesticides known as organophosphates is widely used in the agricultural setting. Acute exposure produces symptoms such as nausea, dizziness, vomiting, abdominal pain, skin and eye problems. Serious and chronic exposures can be associated with causing conditions involving the respiratory, neurological, dermatologic and reproductive systems as well as potentially causing cancers, depression and memory disorders.

Regulatory issues

The EPA is responsible for the regulation of pesticide use in agriculture through the Worker Protection Standard (WPS). Together with OSHA regulations, WPS works to ensure that the environment, pesticide handlers, agricultural workers and the general public are protected against the toxicological and health effects of pesticides. A link to information on how to comply with the EPA's WPS is listed under our 'Business Owner Briefing'. Briefly, the WPS outlines the responsibilities of agricultural employers so that:

- Workers are fully aware of the health risks of pesticides and that there is adequate communication regarding their use (eg WPS safety posters, emergency contacts, labeling)
- There is adequate training for agricultural workers and others that are involved with handling pesticides
- There are decontamination procedures and emergency services access
- There are application restrictions, monitoring, warning signs and Restricted Entry Intervals (for the contaminated site)
- There is provision of Personal Protective Equipment (PPE) and training for their use, maintenance and decontamination

Pesticides

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KEY POINT SUMMARY:

- Pesticides are agents or substances used to control, repel or kill pests
- The nature of pesticides is wide and varied - they are designed to be toxic to the organism that they are working against but are often toxic or fatal to humans
- It is estimated that there are around 10,000-20,000 physician-reported poisonings of agricultural workers each year in the US (EPA)
- The health affects of pesticides on humans depends on their type (chemical or biological nature) and the length of exposure
- The EPA is responsible for the regulation of pesticide use in the agricultural setting through the Worker Protection Standard (WPS)
- Employers are advised to read a guide to help comply with the WPS regulations. A link to that document is provided under our 'Business Owner Briefing'

FIND OUT MORE...

US Environmental Protection Agency (EPA)

www.epa.gov/agriculture/tpes.html

National Institute for Occupational Safety and Health

www.cdc.gov/niosh/topics/pesticides/

Business Owner Briefing

"How to Comply with the Worker Protection Standard for Agricultural Pesticides -

What Employers Need to Know"

www.epa.gov/agriculture/epa-735-b-05-002.pdf

Medical Director Review

"Pesticide Toxicology - evaluating safety and risk" (Whitford et al., 2003)
www.btny.purdue.edu/Pubs/PPP/PPP-40.pdf

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