

Plant Pest Interaction - History and Overview; Basic Chemistry of Pesticides

Key Terms and Concepts:

Upon completion of this course, the student should be familiar with the following terms, concepts, and programs.

Pesticides

Insecticides

Herbicides

Fungicides

Rodenticides

Organochlorines

Organophosphates

Carbamates

Pyrethroids

Contact pesticides

Systemic pesticides

Broad spectrum pesticides

Narrow spectrum pesticides

Minor use pesticides

Anti-microbial pesticides

Insecticidal growth regulators

Persistent pesticides

Non-persistent pesticides

Oncogenic pesticides

Carcinogenic pesticides

Action of pesticides

Primary pests

Secondary Pests

Predators

Beneficial insects

Natural enemies

Parasites

Parasitoids

Pesticides and human health

Acute toxicity

Chronic toxicity

Biomagnification

Bioconcentration

Carcinogens

Endocrine disruptors

Pesticide toxicity

High toxicity

Selective toxicity

Mammalian to Insect Selectivity Ratio

Insect to Insect Selectivity Ratio

Oxidative detoxification System

Non-oxidative detoxification system

Inert ingredients

Pesticide formulation

Active ingredient

Synergists

Quantitative exposure to pesticides

Qualitative exposure to pesticides

Pesticide management ratings

Indicators and measures of pesticide toxicity and residue

Tolerance levels

Lethal Dose (LD_{50})

Lethal Concentration (LC_{50})

No Observable Effect Level (NOEL)

Accepted Daily Intake (ADI)

Reference Dose

Maximum Contamination Level (MCL)

Maximum Tolerated Dose (MTD)

Maximum Residue Limit (MRL)

Theoretical Maximum Residue Contribution (TMRC)

Links:

Information on pests and pesticides – US:

Pesticide Active Ingredient Information, Cornell University

<http://pmep.cce.cornell.edu/profiles/index.html>

National Pesticide Information Center, Oregon State University

<http://npic.orst.edu/>

New Pest Management Technologies

<http://www.pestmanagement.info/NPMT/about.cfm>

Pest Tracker – National Agricultural Pest Information System (NAPIS)

<http://ceris.purdue.edu/napis/>

Pesticide Product Information System (PPIS), EPA

<http://www.epa.gov/opppmsd1/PPISdata/index.html>

Exttoxnet, The Extension Toxicology Network

<http://exttoxnet.orst.edu/>

Information on pests and pesticides – International:

Global Crop Pests – Identification and Information, Cornell International Institute for Food, Agriculture and Development

<http://www.nysaes.cornell.edu/ent/hortcrops/>

Pesticide use – US:

Agricultural Chemical Use Database, National Agricultural Statistics Service (NASS)

<http://www.pestmanagement.info/nass/>

ERS Briefing Room on Agricultural Chemicals and Production Technology

<http://www.ers.usda.gov/Briefing/AgChemicals/>

Pesticide Use Data, Crop life Foundation

http://www.croplifefoundation.org/cpri_pestuse.htm

National Pesticide Use Database, National Center for Food and Agricultural Policy, North Carolina State University

<http://cipm.ncsu.edu/croplife/>

Pesticide use – International:

Global Information Network on Chemicals

<http://www.nihs.go.jp/GINC/>

Pesticide industry and sustainable development:

Responsible Care Program

<http://www.responsiblecare.org/>

World Business Council for Sustainable Development

<http://www.wbcsd.org/templates/TemplateWBCSD5/layout.asp?MenuID=1>

Ceres – Investors and Environmentalists for Sustainable Prosperity

<http://www.ceres.org/>