Applying knowledge to improve water quality

Pacific Northwest

Regional Water Program

A Partnership of USDA NIFA
& Land Grant Colleges and Universities

Spring 2009
PNWWATER 153

Protecting Water Quality:

Using Pesticides Correctly

Protecting agronomic, horticultural, and landscape plants from pests is very challenging in the Pacific Northwest. The Extension Services at Oregon State University, Washington State University, and the University of Idaho meet this challenge by producing a Pacific Northwest Weed Management Handbook, a Pacific Northwest Insect Management Handbook, and a Pacific Northwest Plant Disease Management Handbook. Each of these annually produced handbooks contain between 500 and 700 pages of the latest information on plant protection chemicals (pesticides) that can be used on hundreds of plants grown in the region. These handbooks are updated on an annual basis.

Pacific Northwest land grant institutions produce Plant Disease, Insect, and Weed management handbooks for agronomic, horticultural, and urban landscape plants.

These handbooks are also widely used by citizens in Alaska because many of the commercial and landscape plants grown in Alaska are common to the other Pacific Northwest states. These handbooks are distributed to Extension faculty at the land grant institutions, to consultants, regulators, and licensed chemical applicators. The handbooks may be too technical for homeowners to use directly; however, advice can be obtained from local Extension offices. All registered (labeled) pesticides for hundreds of commercial and home landscape plants are listed in these handbooks along with legal application rates.

Throughout these handbooks you will see the following statement: “In all cases, follow the instructions on the pesticide label.” These handbooks have no legal status. It is the user’s responsibility to follow the pesticide label – it is a legal document. By law, people who apply pesticides must possess current pesticide labels and must use the pesticides in a manner that is consistent with the label. By doing so, water contamination is minimized.

These handbooks help to protect water resources in the Pacific Northwest because pesticide recommendations are based on legal (labeled) use. Over 100 plant protection experts at Washington State University, Oregon State University, and the University of Idaho compile the information in these three handbooks. Consequently, the recommendations are coming from the experts in both plant protection and water resources.

These handbooks emphasize the importance of always reading the pesticide label and to follow the label directions. This is the single most important approach to pesticide safety and protecting water quality. If a person is still in doubt after reading the label, they should contact a person qualified to help evaluate the hazard of the chemical and its use. Extension personnel can help with this!

Pesticides are a general term for chemicals that kill plant pests. Pesticides that kill weeds are called herbicides. Pesticides that kill insects are called insecticides. Pesticides that kill mites, nematodes, rodents, and fungal diseases in plants are referred to as miticides, nematicides, rodenticides, and fungicides, respectively. In addition to using chemicals to kill a pest, other strategies including biological, cultural, and mechanical control may successfully control a pest and also do a better job protecting water quality. For instance, some weeds can be controlled using mechanical methods such as using

Washington State University
Oregon State University OSU
University of Idaho
A Legacy of Leading
Northwest Indian College
UAF University of Alaska Fairbanks
United States Environmental Protection Agency
National Institute of Food and Agriculture USDA

Pacific Northwest Regional Water Quality Coordination Project Partners

Land Grant Universities

Alaska
Cooperative Extension Service
Contact Fred Sorensen:
907-786-6311
http://www.uaf.edu/ces/water/
University Publications:
http://www.alaska.edu/uaf/ces/publications/

Idaho
University of Idaho
Cooperative Extension System
Contact Bob Mahler: 208-885-7025
http://www.uidaho.edu/wq/wqhome.html
University Publications:
http://info.ag.uidaho.edu/Catalog/catalog.htm

Oregon
Oregon State University
Extension Service
Contact Mike Gamroth: 541-737-3316
http://extension.oregonstate.edu/
University Publications:
http://extension.oregonstate.edu/catalog/

Washington
Washington State University
WSU Extension
Contact Bob Simmons:
360-427-9670 ext. 690
http://wawater.wsu.edu/
University Publications:
http://pubs.wsu.edu/

Northwest Indian College
Contact Charlotte Clausing:
360-392-4319
cclausing@nwic.edu or
http://www.nwic.edu/

Water Resource Research Institutes
Water and Environmental Research Center (Alaska)
http://www.uaf.edu/water/

Idaho Water Resources Research Institute
http://www.boise.uidaho.edu/

Institute for Water and Watersheds (Oregon)
http://water.oregonstate.edu/

State of Washington Water Research Center
http://www.swwrc.wsu.edu/

Environmental Protection Agency
EPA, Region 10
The Pacific Northwest
http://www.epa.gov/r10earth/

Office of Research and Development, Corvallis Laboratory
http://www.epa.gov/wed/

For more information contact
Jan Seago at 206-553-0038 or
seago.jan@epa.gov

The Project
Land Grant Universities, Water Research Institutes, and EPA Region 10 have formed a partnership to provide research and education to communities about protecting or restoring the quality of water resources. This partnership is being supported in part by the USDA's National Institute of Food and Agriculture (NIFA).

Our Goal and Approach
The goal of this Project is to provide leadership for water resources research, education, and outreach to help people, industry, and governments to prevent and solve current and emerging water quality and quantity problems. The approach to achieving this goal is for the Partners to develop a coordinated water quality effort based on, and strengthening, indivudual state programs.

Our Strengths
The Project promotes regional collaboration by acknowledging existing programs and successful efforts; assisting program gaps; identifying potential issues for cross-agency and private sector collaboration; and developing a clearinghouse of expertise and programs. In addition, the Project establishes or enhances partnerships with federal, state, and local environmental and water resource management agencies, such as by placing a University Liaison within the offices of EPA Region 10.

tillage practices, minimum or no-tillage systems, water management, and/or by changing crop rotations.

Scientists that work in plant protection represent many scientific disciplines at the region's land grant institutions. Some of these represented scientific disciplines include: entomology (the study of insects), plant pathology (the study of plant diseases), weed science, and nematology (the study of nematodes).

The Pacific Northwest Weed Management Handbook concentrates on listing labeled chemicals that kill unwanted weeds in agronomic, horticultural, and urban situations. In contrast the Pacific Northwest Plant Disease Management Handbook provides both cultural and chemical control options to control unwanted plant diseases in urban, landscape, and cropping systems. The Pacific Northwest Insect Management Handbook emphasizes chemical control of pests; however, when available, alternative cultural or biological controls for specific insects are presented.

The Pacific Northwest Weed Management Handbook places special emphasis on the relationship of pesticides and water quality. Proper handling, use, and disposal of pesticides are critical for preventing adverse impacts on water resources. Environmental pollution can occur when pesticides enter surface and groundwater systems through misapplication, movement of treated soils, irrigation return flows, runoff from urban and agricultural land, stormwater runoff, and leaching through soils. It is important to know the pesticide and soil properties to help avoid water contamination.

Copies of each handbook are available at a cost of $50.00 and can be obtained from the publication departments at Oregon State University (puborders@oregonstate.edu), Washington State University (ext.pubs@wsu.edu), and the University of Idaho (calspubs@uidaho.edu).

National Water Quality Program Areas

The four land grant universities in the Pacific Northwest have aligned our water resource Extension and research efforts with eight themes of the USDA's National Institute of Food and Agriculture.

1. Animal Waste Management
2. Drinking Water and Human Health
3. Environmental Restoration
4. Nutrient and Pesticide Management
5. Pollution Assessment and Prevention
6. Watershed Management
7. Water Conservation and Management
8. Water Policy and Economics

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under Agreement No. 2008-51130-04734.