



Applying knowledge to improve water quality

Pacific Northwest

Regional Water Program

A Partnership of USDA NIFA
& Land Grant Colleges and Universities

Fall 2005
PNWWATER 070

Water Protection:

Dryland Nutrient Guidelines Updated

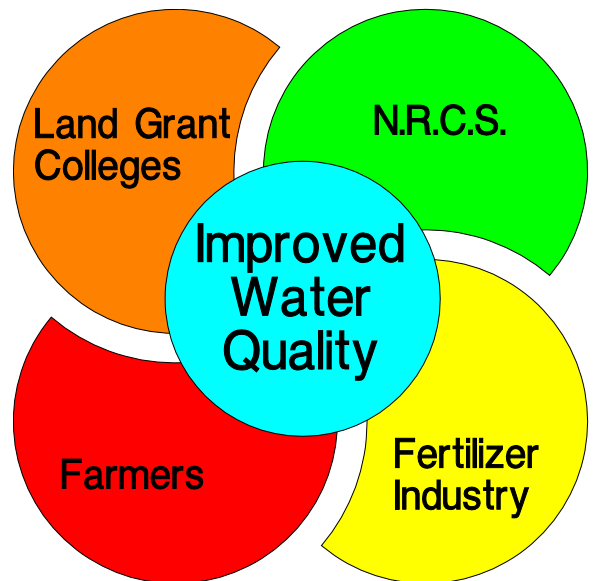
Over 20,000,000 acres of farmland in the Pacific Northwest is routinely fertilized with nitrogen and/or phosphorus fertilizers. The use of commercial fertilizers allow farmers in the Pacific Northwest to produce large quantities of grains, fruits, and vegetables which significantly contributes to the region's economy. This food feeds people in the region, throughout the USA, and in many countries across the globe. Fertilizers make this all possible; however, they must be used in a knowledgeable way to prevent undesirable environmental side effects such as the contamination of surface and ground waters in the region.

The land grant institutions in the region (Oregon State University, University of Alaska, University of Idaho, Washington State University) have invested a significant amount of money conducting research over the last 60 years in developing fertilizer rate guidelines for major crops grown in the region. These research-based guidelines, known as *fertilizer guides*, suggest nitrogen and phosphorus fertilizer application rates based on soil testing information and good science. These guidelines, if followed, will result in maximum economic yields when coupled with good agronomic management practices. In the last 12 months several of the fertilizer guides for dryland crops in the region have been revised to make recommendations more uniform across state lines and to emphasize management practices that result in both maximum economic yields and the protection of surface and ground water quality.

It is important that fertilizer recommendations for nitrogen and phosphorus be updated on a regular basis because of the current emphasis on the protection of water resources in our region. The federal EQUIP (Environmental Quality Incentives Program) and CSP (Conservation Security Program) programs require the use of sound nutrient management strategies which can be documented through record keeping by landowners. The land grant university generated fertilizer guidelines serve as the source for sound nutrient management and the protection of water quality.

In August 2004 representatives from the fertilizer industry, the Natural Resources Conservation Service (USDA-NRCS), and the land grant universities met in Moscow, Idaho to discuss current fertilizer guidelines for dryland crops grown in the region. As a consequence of this meeting scientists from the land grant institutions agreed to revise existing guidelines for dryland crops so that recommendations would become more uniform across state lines and to emphasize the importance of water quality protection when providing guidance on the timing and application method of nitrogen fertilizers in the guides.

As a consequence of this meeting fertilizer guides for dryland cereal crops have been published for eastern Oregon, eastern Washington, and northern Idaho. The newly revised fertilizer guidelines will be incorporated



Pacific Northwest Regional Water Quality Coordination Project Partners

Land Grant Universities

Alaska

Cooperative Extension Service
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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/>

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Contact Charlotte Clausing:
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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/>

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into the OnePlan nutrient management strategies developed by NRCS for use in Idaho and Oregon.

A copy of the new *Dryland Winter Wheat Eastern Washington Nutrient Management Guide* (EB1987) can be obtained from the Washington State University Bulletin office, 1-800-723-1763, or online at <http://pubs.wsu.edu/>.

Oregon State University has developed/revised five fertilizer guides for cereal crops in eastern Oregon. These guides are all available online at: <http://extension.oregonstate.edu/catalog>. The titles of the new guides include:

Winter Wheat in Summer Fallow Systems (low precipitation zone) FG 80E

Winter Wheat and Spring Grains in Continuous Cropping Systems (low precipitation zone) FG 81E

Winter Wheat in Summer Fallow Systems (intermediate precipitation zone) FG 82E

Winter Wheat in Continuous Cropping Systems (intermediate precipitation zone) FG 83E

Winter Wheat in Continuous Cropping Systems (high precipitation zone) FG 84E

The University of Idaho has revised four fertilizer guides for cereal crops in the dryland region of northern Idaho. These guides are all available online at: <http://info.ag.uidaho.edu/Catalog/catalog.html>. The titles of the revised guides include:

Northern Idaho Fertilizer Guide: Winter Wheat, CIS 453

Northern Idaho Fertilizer Guide: Soft White Spring Wheat, CIS 1101

Northern Idaho Fertilizer Guide: Spring Barley, CIS 920

Northern Idaho Fertilizer Guide: Winter Barley, CIS 954

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.

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

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