Applying knowledge to improve water quality

Pacific Northwest

Regional Water Program

A Partnership of USDA NIFA
& Land Grant Colleges and Universities

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Drinking Water Quality:

The Bottled Water Debate

The equivalent of over 7,000,000,000 gallons of bottled water were sold in the USA in 2008. This means that the average American purchased approximately 110 quarts of drinking water last year. In fact bottle water sales in the USA have tripled in since 1996. Bottled water can be defined as purified water that is packaged in bottles ranging in size from 8 ounces to 5 gallons and sold commercially at the local level to consumers for drinking purposes. For the last two decades, this has been the fastest growing commercial bottled product in the USA (including pop, beer, juice). Worldwide, bottled water sales exceed $100,000,000,000 per year and are still expanding. Bottled water is not cheap; costs average almost $3.00 per gallon. This is more expensive than gasoline (prices average about $2.00 per gallon in early 2009)!

The Environmental Protection Agency (EPA) through the Safe Drinking Water Act (SDWA) regulates water from the tap in our homes. On the other hand, the Food and Drug Administration (FDA) regulates bottled water.

Some of the many brands of bottled water available to consumers in the Pacific Northwest.

All cities, towns, municipalities, and rural water districts that provide drinking water to at least 15 homes in the USA are required to meet federal drinking water standards established by the EPA. So, if you get your drinking water from one of these sources your water is guaranteed to be safe for consumption. If you obtain you drinking water from a private well or private surface water source the safety of your water for drinking purposes is not regulated. Basically, it is "user beware." If your drinking water comes from a private source it is your responsibility to have it tested for its safety. The FDA sets standards for the safety of bottled water. Basically, the FDA and EPA have similar standards; however, EPA standards are slightly more rigid, resulting in drinking water coming from municipalities being at least as safe as bottled water in the USA.

All city (municipal) drinking water sources have to meet federal primary drinking water standards for pathogenic microorganisms, inorganic chemicals, organic chemicals, radionuclides, and turbidity. The government (EPA) has also established secondary standards for taste, odor, corrosivity, color, and non-toxic metals in drinking water. These secondary standards are based on consumer preferences rather than actual health considerations. Consequently, municipal water supplies are not required to meet aesthetic (secondary standards) preferences. Consumers that want to treat their own tap water for secondary standards often buy additional filters to install on their kitchen faucets or have separate filter units. Many brands of bottled water, however, do treat drinking water for secondary drinking water standards to make it more aesthetically pleasing than tap water.

Residents of the Pacific Northwest are blessed with good quality drinking water. Our municipalities ensure that our water is safe to drink and, in most cases, aesthetic issues such as taste, odor, and color do not have a negative impact on our drinking water supply.

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United States Environmental Protection Agency
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Pacific Northwest Regional Water Quality Coordination Project Partners

Land Grant Universities

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907-786-6311
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University Publications:
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University Publications:
http://info.ag.uidaho.edu/Catalog/catalog.htm

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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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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.

The case for bottled water. There are some situations where a supply of bottled water is desirable. First, bottled water is often used as a convenience when taking a trip or for eating a packed lunch away from a running water source. It may also be desirable to have a supply of bottled water for emergencies, when tap water may not be dependable or continuous. Bottled water may also be warranted if your regular drinking water source (a private well) is not regulated by EPA and you have concerns about a specific microbial or chemical contaminant in that water.

The case against bottled water. For the 85 percent of Pacific Northwest residents that get their water from public water systems, bottled is no safer than tap water. Bottled water is expensive! Bottled water generates a lot of plastic waste that often ends up in landfills. The transportation of bottled water can also leave a large carbon footprint, particularly if the water is imported. If taste, color or odor is the issue, a home installed water filter can often improve taste for much less money than purchasing bottled water.

Example of a table-top water filter used to eliminate objectionable taste from municipal water supplies.

Summary. Drinking water supplies are adequate and safe for the vast majority of Pacific Northwest residents. Except for convenience, emergencies, and isolated instances where private water supplies might be contaminated with microbial pathogens or nitrates the expense associated with buying and using bottled water should be avoided.

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

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