

# Think Smart About Pesticides

## The Pathway for Christmas Tree Farms to Healthier Waters



### Are pesticides in our waterways?

Yes, pesticides have been found in water samples collected from the Clackamas River and its tributaries. The United States Geological Survey (USGS) evaluated pesticides in the mainstem of the Clackamas River and eight tributaries from 2000 through 2005. In all, 119 water samples were analyzed, detecting the presence of 63 different pesticide compounds. Results revealed that 97% of all samples had 2 or more types of pesticides present. Pesticides were detected in all of the eight sampled tributaries, with Deep and Rock Creeks containing the highest pesticide amounts. Seven of the eight tributaries had pesticide levels that exceeded benchmarks that have been set to protect fish and invertebrates.<sup>1</sup> To read the full report visit:

<http://pubs.usgs.gov/sir/2008/5027>.

Since 2005, water quality monitoring performed by the Oregon Department of Environmental Quality (DEQ) has also shown exceedances in water quality standards for certain pesticides in Clackamas River tributaries.

### Where are pesticides coming from?

The majority of the pesticides found in our waterways have multiple uses including nurseries, floriculture crops, agriculture, right-of ways, golf courses, forestland, landscaping, and other urban applications.<sup>1</sup> Although the current levels of pesticides did not exceed human health benchmarks, their presence is a warning sign. Since there are many sources of pesticides, it is crucial that all pesticide users do their part to keep pesticides out of our waterways before it develops into a big problem.



### What does this have to do with Christmas Tree Farms?

🌲 As you may already know Oregon is the leading producer of Christmas trees in the United States: in 2007 over 7 million trees were sold with annual revenues at \$109.3 million!<sup>2</sup> Christmas tree growers face a number of pests and diseases including adelgids, aphids, blights, Swiss needle cast, quackgrass, and other weedy grasses.<sup>3</sup> Often pesticides are needed to control pests on Christmas tree farms. Effective pest and pesticide management is very important for both economic and environmental reasons.

🌲 The following are some of the many pesticide chemicals found in our waterways: 2,4-D, Atrazine, Chlorothalonil, Chlorpyrifos, Diazinon, Endosulfan, Glyphosate, Hexazinone, Imidacloprid, Oxyfluoren, Simazine, and Triclopyr.<sup>1</sup> Read your product label to determine the chemical name of the pesticide product you are using. To learn more about pesticides and pesticide related topics please visit the **National Pesticide Information Center** website at <http://npic.orst.edu/index.html>

# Tips to reduce your pesticide use



## Non-Chemical Methods

**Pest Prevention-** It is important to plant tree species that are well-suited for your specific site conditions- especially your soil conditions. For example, if the site has poor drainage avoid planting noble fir in the area. Undesirable conditions can make trees more susceptible to pests.

**Pest Scouting-** Pest scouting is the practice of inspecting trees to identify pests. Frequent scouting allows for early detection and quick response. It is an effective way for growers to reduce their pesticide use and the cost of pest management, while simultaneously increasing the effectiveness of their efforts. <sup>3</sup>

**Create a Vegetation Buffer-** A very effective way to keep pesticides out of our waterways is to plant a vegetated buffer strip along the stream. The larger the buffer the better! (Any amount of buffer will help) A vegetated buffer is comprised of a mixture of grasses, shrubs, and trees. Buffers act as a sponge by absorbing pesticides and other pollutants carried by stormwater runoff. Buffers can also help minimize costs associated with repairing problems caused by stream bank erosion.

## Chemical Methods

If treatment is necessary, there are many ways to minimize your pesticide use, which helps reduce costs and protect our waterways.

**Pesticide Selection-** Always read the pesticide label for specific product information and proper disposal methods. Ask your Crop Advisor about new or existing products that may be more effective. When possible, select a product that has a:

- 🌲 Lower toxicity to human health and aquatic -life
- 🌲 Lower potential to be carried in stormwater runoff
- 🌲 Lower potential to leach into groundwater

**Sprayer Calibration-** Improperly calibrated equipment can damage non-target and target plants and increase costs.

Always recalibrate if: <sup>4</sup>

- 🌲 You switch to a different kind of pesticide
- 🌲 The application equipment has not been used for a long time
- 🌲 Your equipment is used infrequently or if you change parts

**Minimizing Drift-** Drift is the movement of pesticides through the air to non-target areas. <sup>5</sup> Precautions to minimize drift include:

- 🌲 Spraying at low-or no-wind conditions (wind speeds 2-9 mph)
- 🌲 Selecting a nozzle to produce the largest effective droplet size
- 🌲 Applying pesticides as close as possible to the target
- 🌲 Lowering the effective operating pressures for your equipment
- 🌲 Spraying at temperatures less than 70 ° F
- 🌲 Asking your dealer about drift reduction agents and nozzles

Please visit the Clackamas River Basin Council website for additional information and resources on the above tips

[www.clackamasriver.org/pesticide/christmastrees.htm](http://www.clackamasriver.org/pesticide/christmastrees.htm)

## Internet Resources

**CLACKAMAS RIVER DRINKING WATER-**  
Clackamas River Water Providers  
[www.clackamasproviders.org](http://www.clackamasproviders.org)

**CLACKAMAS COUNTY CONSERVATION-**  
Clackamas County SWCD  
[www.conservationdistrict.org](http://www.conservationdistrict.org)

**COUNTY CHRISTMAS TREE GROWERS-**  
OSU- Extension Service  
<http://extension.oregonstate.edu/clackamas/xmastrees>

**PESTICIDE APPLICATION & SAFETY-**  
OR Dept. of Agriculture  
[www.oregon.gov/ODA/PEST](http://www.oregon.gov/ODA/PEST)

**WATER QUALITY-**  
OR Dept. of Environmental Quality  
[www.oregon.gov/DEQ/WQ](http://www.oregon.gov/DEQ/WQ)

## References

1. Carpenter, K. et al (2008) Pesticide occurrence and distribution in the lower Clackamas basin. USGS. 2008-5027, 98 p.
2. National Agricultural Statistics Service (2008) Oregon Christmas Trees.
3. Landgren, C. et al (2003) Growing Christmas Trees in the Pacific Northwest. A PNW Extension Publication.
4. Rinehold, J. (1999) Crop Profile for Christmas trees in WA. WA Coop. Extension.
5. Boerboom, C. et al (1993) Turf & Ornamental Weed Management Principles. WSU: Coop. Ext.



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