

Volunteer Potato Forecast - 2012  
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Winter soil temperatures were recorded at the USDA-ARS Paterson research site to provide information on the potential for volunteer potato tubers to survive and become a weed problem in 2012. Soil temperatures were recorded at four depths (2.75, 4.75, 6.75, and 8.75 inches) beneath volunteer spring wheat from mid-November 2011 through February 2012.

The lowest air temperatures this winter occurred December 23, 2011 and January 12, 2012 with air temperatures reaching 16°F and 11° F, respectively. Soil temperatures reached a low of 29° F at 2 ¾ inches on January 13, which is not cold enough to kill potato tubers. Temperatures at all lower depths remained above 31° F for the same period. Potato tubers are normally killed when they reach temperatures ≤ 28° F.

Only the tubers left on the soil surface to about 1 inch deep were exposed to killing temperatures. Based on previous research on tuber depth (Newberry and Thornton, 2004), we estimate that 67% of the tubers left in the field last fall in the lower Columbia Basin were deep enough to escape killing temperatures. Therefore, volunteer potatoes will be a common occurrence in the lower Columbia Basin this spring and will be more prevalent this crop year than in recent years.

Agrimet weather station data at Hermiston, OR also recorded air temperature of 9.5° F and soil temperature at the 2 inch depth of 25.6° F on January 13, but temperature at the 4 inch depth only reached 29.6° F, not cold enough to kill potato tubers. The ground cover at the Agrimet weather station site consists of nonirrigated weeds and natural vegetation, which could affect the depth to which cold air temperatures penetrate the soil.

Data from the Agrimet weather station in Odessa, WA indicated that air temperatures reached a minimum of 5.2° F on January 16, and soil temperatures reached 20.6°, 25.4°, and 30.6° F at 2, 4, and 8 inches deep, respectively. Therefore, volunteer potatoes may have been killed to deeper depths in the northern part of the Columbia Basin.

For more information on volunteer potato control visit the Prosser USDA-ARS website at: <http://www.ars.usda.gov/pwa/prosser>

USDA Paterson Soil Temperature  
November 2011 - February 2012

