



January 30, 2007

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I am responding to your inquiry, forwarded to me from Rick Melnicoe, Director of the Western Integrated Pest Management Center (WIPMC), on January 3, 2007, regarding overhead irrigation use of water treated with acrolein. You asked about the time lag between acrolein applications and harvest for apples and grapes grown in Washington and for apples grown in Idaho.

Washington Acrolein Applications

Of the 16 irrigation districts in Washington, ten made acrolein applications in 2005. For these ten districts, the date for final acrolein applications varied from August 26 to September 28.

Washington Wine Grapes

In Washington there are approximately 35,000 acres of wine grapes grown and of this we estimate that less than 1% are sprinkler irrigated. For the majority of wine grapes, harvest begins in mid-October. There are some wine grapes used in sparkling wine production that are harvested earlier (as early as late-August) but Extension personnel indicated that none of these vineyards are sprinkler irrigated. For the 1% of Washington's wine grapes that are sprinkler irrigated, there is at least 15 days between the last application of irrigation water that has been treated with acrolein and the beginning of harvest.

Washington Juice Grapes

There are 25,000 acres of juice grapes grown in Washington and 80% of these are sprinkler irrigated. There are two primary varieties of juice grapes grown in the state. Niagaras comprise 20% of Washington's juice grapes while the remaining 80% are Concord. The Niagara harvest starts in mid-October and the Concord harvest begins October 1. For Niagara grapes there is at least 15 days between the last application of irrigation water that has been treated with acrolein and the start of harvest. For Concord there might be only two or three days between an application of acrolein to an irrigation canal and the start of harvest.

Washington Apples

The picture for Washington apples is somewhat more complex. While there is little if any water that is applied overhead to Washington apples for the purposes of irrigation, we estimate that

16% of Washington's 173,000 acres of apples are set up with some type of overhead equipment that applies irrigation water to apples in order to cool the fruit in the summer to avoid crop damage due to sunburn. Note that in some apple growing regions, such as the Yakima Valley, estimates for apple acreage using overhead cooling are much higher. Cooling is done either by misting the air or sprinkling the fruit. In Washington the practice of using irrigation water to cool orchards is becoming more common because apples grown in newer, high density plantings, where the fruit is more exposed, are more prone to sunburn. The majority of cooling is done in July and August; however, cooling is obviously weather dependant and water use may occur from late-June to late-September or early-October, any time temperatures warrant.

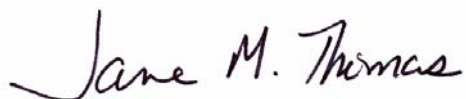
Approximately 75% of Washington apples are made up of Red Delicious (30%), Golden Delicious (12%), Gala (12%), Fuji (12%), and Granny Smith (10%) varieties. Red Delicious apples are typically harvested mid-September to mid-October and Golden Delicious are harvested mid- to late-September. Galas are harvested earlier in mid-August. Fujis and Granny Smiths are harvested in mid- to late-October. Thus, for the most common Washington apples, only Fujis and Granny Smiths will have a 15 to 30 day gap between final acrolein applications to irrigation water and apple harvest. In general, the time between acrolein applications and fruit harvest will depend upon the weather. If temperatures remain high in the fall, irrigation water might be used for cooling right up to fruit harvest for some of these varieties. Typically growers will cease using water for both cooling and irrigation a few days before harvest so that the ground is dry enough for harvest equipment and to ensure that the fruit is dry when it is picked.

Idaho Acrolein Applications and Apple Production

Acrolein is applied to irrigation canals in some of the apple growing areas in Idaho; however, there is no longer any overhead irrigation or overhead cooling used in Idaho apple production.

I have attached a contact list for your use should you have further questions. Thank you for the opportunity to provide this information.

Sincerely,



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Contact List

Acrolein: Use of Overhead Irrigation in Washington Apples and Grapes and Idaho Apples

Crop:	Last Name:	First Name:	Organization:	Title:	Work Ph:	Email:	Responsible State:
apple	Bush	Mike	Washington State University	Extension Educator	(509) 574-1600	bushm@wsu.edu	Washington
apple	Fallahi	Essie	University of Idaho	Extrnsion Tree Fruit Specialist	(208) 722-6701	efallahi@uidaho.edu	Idaho
apple	Peters	Troy	Washington State University	Extension Irrigation Specialist	(509) 786-2226	troy_peters@wsu.edu	Washington
apple	Schrader	Larry	Washington State University	Scientist	(509) 663-8181	schrader@wsu.edu	Washington
apple	Shurtlef	Ron	Water District 65	Water Master	(208) 642-4465	waterdist65@srvinet.com	Idaho
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apple	Walsh	Doug	Washington State University	IPM Coordinator	(509) 786-9287	dwalsh@wsu.edu	Washington
grape	Olmstead	Mercy	Washington State University	Viticulture Extension Specialist	(509) 786-9203	molmstead@wsu.edu	Washington
grape	Walsh	Doug	Washington State University	IPM Coordinator	(509) 786-9287	dwalsh@wsu.edu	Washington
acrolein use	McLain	Kelly	Washington State Department of Ecology	Aquatic Pesticide Specialist/Permit Writer	(360) 407-6938	kelm461@ecy.wa.gov	Washington
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