



October 11, 2004

Ref: 2004-14-1

Teung F. Chin, Ph.D.
Office of Pest Management Policy
Agricultural Research Service
U.S. Department of Agriculture
4700 River Road, Unit 149
Riverdale, MD 20737-1237

The following information is provided to you from the Western Integrated Pest Management Center regarding chemigation practices in the Pacific Northwest (PNW). This information is being submitted in response to a request that was forwarded to me from Rick Melnicoe, Director of the Western Integrated Pest Management Center, on September 21, 2004.

Attached to this letter are completed chemigation questionnaires providing an overview of chemigation practices in Washington and Idaho. No information was available for overall chemigation practices in Utah, however, both vegetable and tree fruit extension specialists report little or no chemigation is practiced on these crops. As far as I was able to determine, there is only one grower in Alaska who practices chemigation. Here chemigation is used to apply metam-sodium (Vapam) prior to planting vegetable crops. Finally, I was unable to find a source for chemigation information for Oregon.

I hope that you find this information helpful.

Sincerely,

A handwritten signature in cursive script that reads "Jane M. Thomas".

Jane M. Thomas
Pacific Northwest Coalition Comment Coordinator
Washington State Pest Management Resource Service
Washington State University Tri-Cities
2710 University Drive
Richland, WA 99354
phone: 509-372-7493 fax: 509-372-7491
e-mail: jmthomas@tricity.wsu.edu

Washington Chemigation Information
Provided by Byron Fitch, Washington State Department of Agriculture

Type of System	Predominant crops	Acres Covered by System	No. of Mixing/Loading Events/Day
Center Pivot/ Motorized lateral move	Potatoes, onions, small grains, alfalfa, timothy	Average: 130A	Average: 1/day
Traveling gun	Pasture, alfalfa, hay, grass	80A	1/day
Solid set	Orchards, cranberry, bulb	20 to 40A	1/day
Portable (Wheel move, end tow, hand move)	Alfalfa (This accounts for <0.1% of everything that is chemigated in the state.)	80A	1/day
Drip or trickle	Hops, vineyards, orchards, onion, potato, berry	60A	1 or 2/day
Rill	Onions, wheat, seed crops (This accounts for <1% of everything that is chemigated in the state.)	40A	1/day

1. How does mixing/loading a product into a chemigation system occur?
 - a. What percent of the mixing/loading events require some type of mixing?

% with mixing (Example- nurse tank) ___10%___

% without mixing (Example - injection system) ___90%___
 - b. If a product requires mixing prior to being loaded into the chemigation system,
 - i. What percent of the mixing/loading events occur off-site, loaded into a nurse tank and then delivered into the chemigation system from the nurse tank and what percent of the mixing/loading events are mixed at the chemigation site?

% off-site mixing ___1% (of the 10% needing mixing)___

% on-site mixing ___99%___

c. When mixing/loading occurs off-site into a nurse tank, what percent of the mixing/loading events utilize a closed or a open delivery system?

i. % closed system ____100%____

ii. % open system ____0%__

iii. Other (specify) _____

d. If mixing occurs at the chemigation site, what percent of the mixing/loading events utilize a closed or a open delivery system?

i. % closed system _____100%____

ii. % open system _____0%__

e. If no mixing is required (that is, the product is loaded or transferred from the product container into the chemigation system), what percent of the mixing/loading events utilize a closed or a open delivery system?

i. % closed ____70%____

ii. % open ____30%____

Idaho Chemigation Information
Completed by Jim Childs, Idaho Department of Agriculture

Chapter 34, Title 22, Idaho Code defines chemigation as “. . . any process whereby chemicals are added to irrigation water . . .” Chemicals meaning fertilizers or pesticides. For the purpose of this questionnaire only estimated figures related to injection of pesticides (herbicides, insecticides, fungicides, etc.) through irrigation systems will be included.

2003 statistics show that Idaho has approximately 3.3 million irrigated acres with about 70% under sprinkler irrigation or about 2,300,000 sprinkler irrigated acres.

The crop that receives the majority of pesticide applications through irrigation water in Idaho is potatoes. According to 2004 Idaho Agricultural Statistics Idaho potato growers planted approximately 360,000 acres of potatoes in 2003.

Chemigation of fertilizers is a common practice on potatoes, sugar beets, corn and other crops and accounts for the majority of chemigation events in Idaho. Chemigation also takes place in greenhouses, nurseries and sod farms. Crops such as sugar beets, corn, ornamentals in greenhouses, and sod farms usually only receive fertilizer through chemigation.

Type of System	Predominant crops	Acres Covered by System	No. of Mixing/Loading Events/Day
Center Pivot	Potatoes, sugar beets, field corn	130 – 133 A	1/pivot rotation (24-72 hr) or 1 per application
Traveling gun	Pasture, alfalfa or grass hay	20, 40, 80 A	1/day
Linear (motorized)	Potatoes, sugar beets	80 A	1/day
Solid set	Potatoes, sugar beets, small grains, pasture	Pivot corners (6-7 A) and 20-40 A	1/day
Portable (Wheel line, end tow, hand move)	Alfalfa hay, potatoes, small grains, pasture	20, 40, 80	1/day
Drip or trickle	Greenhouse plants, ornamental nurseries, vineyards, hops	½ -50 A	1/day

1. How does mixing/loading a product into a chemigation system occur?
 - a. What percent of the mixing/loading events require some type of mixing?

% with mixing (Example- nurse tank) 50%

% without mixing (Example - injection system) 50%

b. If a product requires mixing prior to being loaded into the chemigation system,

i. What percent of the mixing/loading events occur off-site, loaded into a nurse tank and then delivered into the chemigation system from the nurse tank and what percent of the mixing/loading events are mixed at the chemigation site?

% off-site mixing 10%

% on-site mixing 90%

c. When mixing/loading occurs off-site into a nurse tank, what percent of the mixing/loading events utilize a closed or a open delivery system?

i. % closed system 95%

ii. % open system 5%

iii. Other (specify) N/A

d. If mixing occurs at the chemigation site, what percent of the mixing/loading events utilize a closed or a open delivery system?

i. % closed system 20%

ii. % open system 80%

e. If no mixing is required (that is, the product is loaded or transferred from the product container into the chemigation system), what percent of the mixing/loading events utilize a closed or a open delivery system?

i. % closed 90%

ii. % open 10%