

Health Concerns Review for the Use of Dinotefuran Pesticide in City Park

On August 9, 2011, the Salt Lake City Fire Department, Risk Management Coordinator called for an opinion about potential health risks from the use of a pesticide product containing dinotefuran as the active ingredient if applied at the Liberty Park in Salt Lake City, Utah. The Risk Management Coordinator asked the Environmental Epidemiology Program, Utah Department of Health to review relevant information for Liberty Park and dinotefuran pesticides. The EEP responded with a telephone report and this written report. This report will be shared with the Utah Department of Agriculture and Food.

Liberty Park is the second-largest public park, at 80 acres in Salt Lake City. The park is located at 500 East 900 South to 700 East 1300 South in ZIP Code area 84102. The park includes a variety of recreational opportunities including picnic sites, jogging paths, basketball, volleyball, and tennis courts, a seasonal amusement section, the Tracey Aviary, and a large pond with two islands. The Tracy Aviary consists of an 8 acre city owned bird collection with approximately 135 species and 400 birds. Some of the birds are considered rare or endangered. The Liberty Park Pond received some contamination from the 2010 Red Butte Creek oil spill when a Chevron Corporation pipeline was ruptured by a lightning strike.

Dinotefuran (N-methyl-N'-nitro-N'-[(tetrahydro-3-furanyl)methyl]guanidine; CAS 164242-70-0; EPA PC Code 044312) is a neo-nicotinoid class insecticide. The main target tissues are the nervous system and immune system in several species, including rats and rabbits. Technical dinotefuran has low acute toxicity by the oral, dermal or inhalation routes. It is not a dermal sensitizer. It can cause low level skin irritation and moderate eye irritation. Subchronic or chronic toxicity includes increased nervous system motor activity consistent with nicotinic cholinergic nervous system responses. There are some effects to the immune system for exposures exceeding 20 mg/kg/day. No adverse effects are expected for developing fetuses or for reproductive health. There is no evidence that dinotefuran is carcinogenic or mutagenic.

Only acute exposures are expected by the public use of Liberty Park. The acute dietary reference dose for all populations is 1.25 mg/kg/day. The short-term inhalation exposure level is 60 mg/kg/day. Dinotefuran is expected to persist in the environment for 22 to 68 days.

While not technically a public health concern, dinotefuran is expected to have some effect on the birds at Tracey Aviary and on the aquatic insect life associated with the Liberty Park Pond. Tracey Aviary officials should be notified before application. The 2010 Red Butte Creek oil spill resulted in significant loss of important aquatic insects. Efforts are underway to try to recover the natural balance for all water systems impacted by that spill. The application of pesticides at Liberty Park should be coordinated with city officials coordinating the recovery effort.

Concerning the public, the Utah Department of Health does not have a concern with the use of this insecticide product being applied at the Liberty Park in Salt Lake City, Utah, as long as the applicators are qualified and comply with all requirements promulgated by the State of Utah and

specifically by the Utah Department of Agriculture and Food. If possible, the application of this pesticide should occur during periods when Liberty Park is closed to the public or in sections closed to the public to avoid immediate exposure and the slight irritation that could occur if exposed. The city should consider posting notices indicating that this pesticide has been used and no health concerns are expected.

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References:

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Mitsui Chemicals of America, Inc. Dinotefuran web pages. August 2011.
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