

Agency of Agriculture Pesticide Regulation

LEGISLATIVE HEARING ON ATRAZINE - FEBRUARY 9, 2017

HOUSE COMMITTEE ON AGRICULTURE & FORESTRY

HOUSE COMMITTEE ON NATURAL RESOURCES, FISH & WILDLIFE

Agency of Agriculture Pesticide Regulation

- ▶ **Product Registration**
 - ▶ Label Review
 - ▶ Confidential Statement of Formula
 - ▶ State Classification – State Restricted Use
- ▶ **Applicator Certification and Training**
 - ▶ Commercial Applicators
 - ▶ Non-commercial
 - ▶ Certified Private

Agency of Agriculture Pesticide Regulation

- ▶ **Distribution and Sales**
 - ▶ **Class A, B, and C Pesticides**
 - ▶ **Restricted Use**
 - ▶ **State Restricted Use**
 - ▶ **General Use**
 - ▶ **Class B**
 - ▶ **Class C**
 - ▶ **Licensed Dealers**
 - ▶ **Annual Usage Reporting**
 - ▶ **Annual Sales and Storage reporting**

Agency of Agriculture Pesticide Regulation

- ▶ Primacy over pesticide use regulation and management in Vermont.
 - ▶ Application, Who, What, Where, When and sometimes how.
 - ▶ Permits:
 - ▶ Golf Course, Rights of Way, Mosquito Larvacide, Aerial, Bird Control.
 - ▶ Disposal
 - ▶ Worker protection standard (WPS)
 - ▶ Endangered Species Act
 - ▶ Container containment
 - ▶ Enforcement of State and Federal pesticide laws

Environmental Protection Agency (EPA) Pesticide Regulation

- ▶ **Registration of products at a National Level**
 - ▶ **The “Label is the Law”**
 - ▶ **Site (where)**
 - ▶ **Application Rate (How much)**
 - ▶ **Personal Protection Equipment (PPE)**
 - ▶ **Environmental Precautions**
 - ▶ **Risk Assessments based on exposure models**
 - ▶ **Dietary (Food Quality Protection Act) FQPA**
 - ▶ **Food**
 - ▶ **Water –Drinking water included in the dietary risk assessment.**
 - ▶ **Ecological- Multiple exposure models**

Environmental Protection Agency (EPA) Pesticide Regulation

- ▶ **The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)**
 - ▶ **Endangered Species Act**
 - ▶ **Registration Review**
 - ▶ **Reregistration**
- ▶ **FIFRA Standard- "will not generally cause unreasonable adverse effects on the environment"**
 - ▶ **any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide, or**
 - ▶ **a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the standard under section 408 of the Federal Food, Drug, and Cosmetic Act (FFDCA).**

Environmental Protection Agency (EPA) Pesticide Regulation

History of Atrazine regulation.

- ▶ 1959 - First registrations for atrazine in US
- ▶ 1980s- Researchers find higher incidence of tumors in one species of rat (Sprague-Dawley) when exposed to high levels of atrazine.
- ▶ 1990s- Due to wide acceptance of atrazine in Midwest agriculture, stewardship programs were developed to minimize exposure to groundwater and surface water sources.
- ▶ November 1994- Triazine Special Review is launched.
- ▶ June 2000- EPA Scientific Advisory Panel recommends reclassification of atrazine as “not likely” to cause cancer in humans.

Environmental Protection Agency (EPA) Pesticide Regulation

- ▶ 1990 – Atrazine classified as restricted use above 2%. Voluntary
- ▶ 1993 – All Atrazine products classified as restricted use (RUP)
 - ▶ No mixing or loading within 50 feet of water
 - ▶ No application within 66 feet of points of run-off
 - ▶ No application within 200 feet of impounded lakes or reservoirs
 - ▶ Maximum label rate 2.5 pounds per acre per year.
- ▶ 2003 – Interim Reregistration eligibility decision
- ▶ 2013 – Atrazine Registration review
- ▶ 2016 – Draft Ecological risk assessment

Agency of Agriculture Water Quality Monitoring

- ▶ **Scope of Groundwater & Surface Water Monitoring**
Data Available for Regulatory & Management Decisions
- ▶ **Growth Curve of the Program**
Origins of/Pathway to the Current Comprehensive Program
- ▶ **Summary of Atrazine Sampling Results**
Details on Range & Frequency of Detections

Management of Atrazine In Vermont

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Atrazine is a commonly used herbicide in Vermont and the active management of atrazine is a cornerstone of the pesticide enforcement, applicator training and water quality monitoring programs. When atrazine detections occur, the State of Vermont works directly with landowners and recommends alternative management practices and prevention techniques known to reduce the likelihood of future detections.

Vermont has been actively managing atrazine to keep exposures below the drinking water standard since 1986.

This approach has been successful in mitigating risk to Vermonters and the environment as demonstrated by the low number of detections that have occurred over the years and the low concentration of those detections, when they do occur.

Scope of Groundwater & Surface Water Monitoring

Vermont Data Available for Regulatory & Management Decisions

- ▶ Land Use & Use Pattern Projects
 - ▶ Corn Grass/Hay Fruits & Vegetables
 - ▶ Christmas Trees Turf & Golf Courses
 - ▶ Rights-of-Way:
 - Railroads Electric Utility Corridors Highways
- ▶ Statewide Baseline Survey (Private Drinking Water 2,300+)
- ▶ Site Investigation & Remediation
- ▶ Farm & Non-Farm Neighbors
 - ▶ Farm (65%) Non-Farm (34%) Public (1%)
- ▶ UVM / DEC Partnerships
 - ▶ Lake Champlain & Major Tributaries

Growth Curve of Monitoring Program

Origins & Pathway to Current Comprehensive Program

- ▶ **Corn Herbicides (w/ Atrazine) Since 1986** (Initial Priority)
- ▶ **Nitrate-N in Groundwater / Drinking Water** (Emerged As Priority)
- ▶ **On-Farm Monitoring Wells & Surface Waters**
 - ▶ (Nutrients (N / P) & Bacteria)
- ▶ **Technical Assistance, Education & AAP Compliance**
 - ▶ BMPs & Cost Share Funding for SFOs w/ Conservation Districts & NRCS
- ▶ **Farm Permitting & Inspection** (LFO & MFO Nutrient Mgmt Plans)
 - ▶ Groundwater Regulatory Authority
- ▶ **Act 64 Integration & Support: RAPs (Required Agricultural Practices)**

Range & Frequency of Atrazine Detections 2007 – 2016

Drinking Water Sources

▶ Drinking Water Sources	1,021	
▶ Total # Samples	1,677	
▶ # Samples w/ Non-Detects	1,003	(59.8%)
▶ # Samples Not Tested	517	(30.8%)
▶ # Samples w/o Results (Pending)	0	
▶ # Samples:		
Positive @ <0.1 ppb	84	(5%)
Positive @ 0.1 – 1 ppb	72	(4.3%)
Positive @ 1 – 3 ppb	0	(0%)
Positive @ > 3 ppb	1	(0.05%)
▶ Total # Samples w/ Detections:	157	(9.3%)

Range & Frequency of Atrazine Detections

2007 – 2016

Surface Water Sites (On-Farm)

▶ Surface Water Sites		76	
▶ Total # Samples		282	
▶ # Samples w/ Non-Detects		160	(56.7%)
▶ # Samples Not Tested		63	(22.3%)
▶ # Samples w/o Results (Pending)		5	(1.8%)
▶ # Samples:	Positive @ <0.1 ppb	15	(5.3%)
	Positive @ 0.1 – 1 ppb	21	(7.4%)
	Positive @ 1 – 3 ppb	4	(1.4%)
	Positive @ > 3 ppb	14	(5%)
▶ Total # Samples w/ Detections:		54	(19.1%)

Range & Frequency of Atrazine Detections

Additional Surface Water Sites: Lakes & Rivers

2001 - 2016

▶ Surface Water Sites		36	
▶ Total # Samples		950	
▶ # Samples w/ Non-Detects		654	(69%)
▶ # Samples:	Positive @ 0.02 - 1 ppb	266	(28%)
	Positive @ 1 - 3 ppb	20	(2.1%)
	Positive @ > 3 ppb	10	(1%)
▶ Total # Samples w/ Detections:		296	(31%)
▶ 2/3rds of samples with detections greater than 1.0 ppb are from same location			

Range & Frequency of Atrazine Detections 2007 – 2016 Monitoring Well Sites

▶ Monitoring Well Sites		17	
▶ Total # Samples		33	
▶ # Samples w/ Non-Detects		1	(3%)
▶ # Samples Not Tested		9	(27.3%)
▶ # Samples w/o Results (Pending)		0	
▶ # Samples:	Positive @ <0.1 ppb	1	(3%)
	Positive @ 0.1 – 1 ppb	10	(30.3%)
	Positive @ 1 – 3 ppb	7	(21.2%)
	Positive @ > 3 ppb	5	(15.2%)
▶ Total # Samples w/ Detections:		23	(69.7%)

Range & Frequency of Atrazine Detections 2007 – 2016 Tile Drain Sites

▶ Tile Drain Sites		21	
▶ Total # Samples		98	
▶ # Samples w/ Non-Detects		16	(16.3%)
▶ # Samples Not Tested		14	(14.3%)
▶ # Samples w/o Results (Pending)		4	(4.1%)
▶ # Samples:	Positive @ <0.1 ppb	17	(17.3%)
	Positive @ 0.1 – 1 ppb	40	(40.8%)
	Positive @ 1 – 3 ppb	6	(6.1%)
	Positive @ > 3 ppb	1	(1%)
▶ Total # Samples w/ Detections:		64	(65.3%)

Agency of Agriculture Pesticide Regulation & Water Quality Monitoring



Some Lessons Learned:

- East Montpelier – Hardwick – Sutton
Influence of Soil & Bedrock Conditions
Responses to Farm Practices
- The “Social Geology” Timeline
- Value/Necessity of Collaboration
w/ Health - Geologic Survey
Water Supply - NRCS