

Water Quality and Atrazine Sensitivity

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KY Depends on Surface Water

- Drinking water in KY largely comes from streams and rivers
- Some systems near large rivers have placed wells in the nearby alluvium

Atrazine is commonly used as a corn herbicide

- Remains as the lowest cost herbicide in a corn weed control program
- Many new “names” have atrazine as one of the ingredients

Atrazine is held tightly by clay and organic matter particles in soils

- Material attaches readily to clay and OM
- This mechanism reduces soluble form and potential for soluble fraction to reach surface water during rainfall events
- Will move with sediment to streams

Atrazine is under re-registration

- Manufacturers made aware of municipal drinking water system data
- MCL of 3 ppb set as upper limit for drinking water
- MCL has been exceeded in several drinking water supplies
- 8 drinking water systems in US required to undergo intensive monitoring

Re-registration

- KY has 2 systems with intensive monitoring
- Syngenta is monitoring all systems that indicate levels above MCL
- One stream, not a water supply, has been monitored by USGS

KY Systems being monitored

- Lewisburg – stopped treating water
- Marion – water from 2 reservoirs with closed watersheds
- Leitchfield – Rough River Lake
- Webster Co. – Green River
- Little River – not providing drinking water

Atrazine Conc. (ppb) in 2003

	Marion	Leitchfield	Webster Co.	Little River
4/9	0.53	0.03	2.19	- - -
/21	0.65	0.18	0.84	7.73
/28	0.64	0.86	3.65	- - -
5/5	0.66	1.63	1.61	4.73
/12	0.69	4.89	1.36	1.19
6/16	0.35	8.42	2.69	1.52
/23	0.40	2.25	0.99	- - -
/30	0.51	2.15	0.97	0.35
7/21	0.27	2.15	0.52	0.89

Atrazine Conc. (ppb) 2004

Date	Marion	Leitchfield	Webster Co.	
4/19	0.12	2.74	1.93	
4/26	0.18	3.50	4.50	
5/3	1.27	2.16	2.90	
5/17	2.25	1.80	4.96	
5/24	2.31	2.43	2.09	
6/7	2.56	2.01	1.27	
6/28	1.93	2.26	1.11	
7/12	1.20	1.85	0.83	
8/23	1.64	2.02	0.49	

Producers & Agribusiness

- Two to three meetings in each watershed using a team of agencies: KY Dept. of Ag., KY DOC, KY F & WLR, NRCS, WKU & CES
- Review data & outline label restrictions by KY DOAg and WKU
- Review conservation programs & other options using NRCS, Fish & Wildlife, DOC & CES
- Discuss no-till & buffers (CES)

BMP's to Reduce Atrazine in Surface Water

- Follow Label (distances and rates)
- Use Vegetative Buffers around fields and along streams
- Max. benefit from no-till + buffer
- Use non-atrazine product within required setbacks around stream or water body

Degradation

- Soil bacteria breakdown atrazine
 - Breakdown products show up in water analysis
 - Low pH speeds breakdown
- Atrazine is slowly degraded in water
 - Long residual in lakes, reservoirs or rivers



Questions ??

Comments