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# BMP's for Atrazine and Ametryn

University of Florida

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# Why be concerned?

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- Important herbicides for weed control in FL sugarcane and sod production
- Commonly found in low concentrations in surface water sampling
- Usage of atrazine has been limited in other areas due to high levels in water

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# Atrazine (Aatrex, others)

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- Widely used in FL sugarcane production
  - Both preemergence and postemergence applications
  - Up to 10 lb/A of atrazine applied per growing season for sugarcane
  - Up to 6 lb/A of atrazine applied per growing season for sod on muck (3lb/A on sand)
  - Applied to a large percentage of sugarcane acreage in Florida

# Ametryn (Evik)

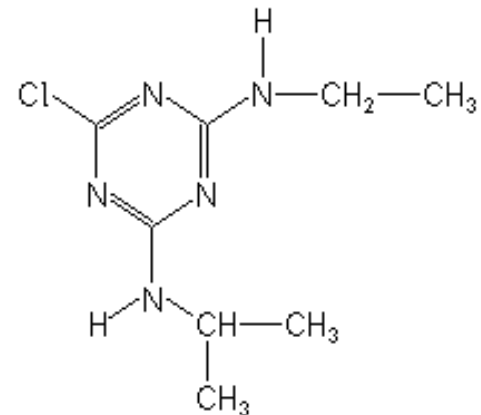
- Commonly used in FL sugarcane production
  - Postemergence application
  - Up to 1.5 lb per application (2 applications)
    - Usually used at much lower rates
    - Not as heavily used as atrazine

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# Atrazine Chemical Characteristics

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- Water solubility not particularly high (33 mg/L)
- Binding to soil organic matter not extremely strong (Koc=128 ml/g)
- Atrazine is less bound, but less water soluble than ametryn
- Average field half-life of 60 days

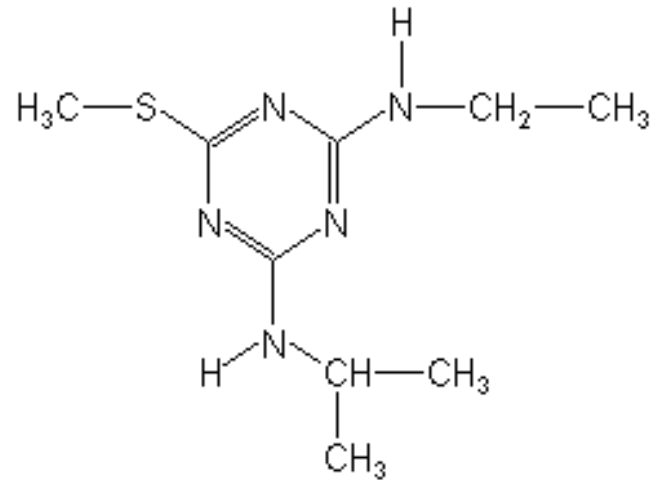


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# Ametryn Chemical Characteristics

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- Water solubility higher than atrazine (194 mg/L)
- Binding to soil organic matter strong relative to atrazine ( $K_{oc}=362$  ml/g)
- In field half-life of 60 days
- Ametryn is more bound, but more water soluble



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# Detection in water sampling

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Sampling at stations throughout EAA

- 18+ years data available
- Atrazine and ametryn both commonly detected at stations in EAA
- Levels are generally very low
  - But they are often found!!!



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# How do they get in the water?

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- Spray drift from field
- Spills during mixing
- Back-siphoning into water body when filling spray tanks
- Water soluble portion moves with runoff water
- Portion bound to organic matter moves with sediment erosion



# How can we minimize atrazine and ametryn in water?

- Minimize physical spray drift into bodies of water
- Use care when mixing and loading herbicides
  - Spills near water bodies can result in large amounts of concentrated product entering water



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# Setback requirements

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- Always follow label requirement regarding setbacks (Found on all atrazine labels)
  - DO NOT mix/load within 50 ft of any well, sinkhole, stream, river, or lake
  - DO NOT apply within 66 ft of where field runoff enters a stream or river
  - DO NOT apply within 200 ft of any lake or reservoir

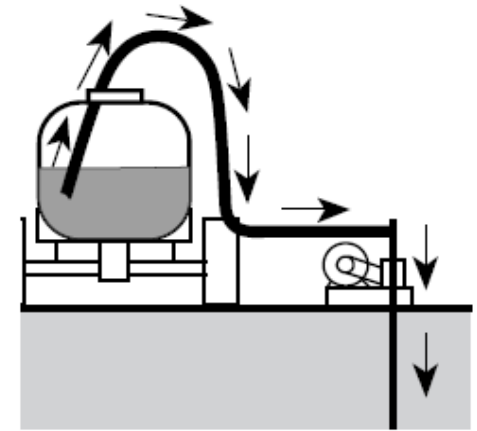


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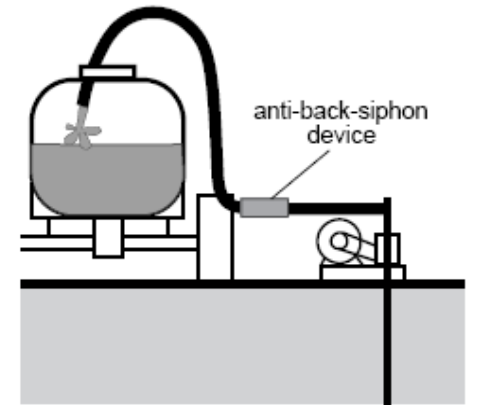
# Anti-Back-Siphoning

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- Make sure all equipment used to supply water is equipped with devices to prevent back-siphoning from the spray/mix tank if the motor shuts off



Avoid back-siphoning  
into water source



Keep fill hose  
above water level

# How can we minimize atrazine and ametryn in water?

- Do not apply to saturated soils
  - More runoff of both water soluble herbicide, and soil particles with herbicide attached
- Holding water
  - Allows the herbicide to be absorbed by soil particles and settle out, or degrade

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# Nutrient BMP's impact herbicide movement

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- Practices that minimize sediment transport
  - Herbicides often bound to sediment
- Vegetative buffers on field edges
  - Can reduce movement of herbicides attached to soil particles



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# Take home message

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- Atrazine and ametryn are important
  - Good stewardship can minimize the amount found in surface waters
    - Use common sense
    - **Follow label directions**
    - Phosphorus BMP's also help reduce occurrence

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# UF/IFAS Pesticide Info

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Latest EREC weather conditions