

Nutrient Mgt. in Kentucky

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KY Division of Water

Ag. Water Quality Authority

- 15 member board created by Legislature
- Governor appointed
- Developed Ag. Water Quality Plan
 - 60 BMP's for use on farm
 - KY Div. of Water enforces
 - Corrective Measures process
 - EPS demand immediate action

Nutrient Management Program

- Based on the Ag. Water Quality Plan
- All farms and timber with >10 acres
- Effective 10/23/2001
- Nutrient management BMP
- Software & website available for Plans

Nutrient Management BMP

- Specifically uses the NRCS 590 standard for KY as basis
- Soil testing frequency rec. by UK
- Annual animal waste analysis required
- Applies to nutrients from all sources
- Soil test for pH, P, K, Ca, Mg & Zn
- Mehlich III extractant

NRCS 590 Standard for KY

- P Threshold is 533 lbs P/acre (Mehlich III)
- N based app. $< \frac{3}{4}$ P Th
- Above $\frac{3}{4}$ P Th (400 lb P/A), 1 of 2 options:
 - 1 Continue P Threshold
 - 2 Use KY P Index

Option 1 P Threshold

- $\frac{3}{4}$ to $1 \frac{1}{2}$ P Threshold Crop Removal
- $1 \frac{1}{2}$ to 2 P Threshold $\frac{1}{2}$ Crop Removal
- >2 P Threshold No added P

Option 2 KY P Index

■ Index is a risk assessment of P loss

■ Low rating

N based app.

■ Medium rating

N based app.

■ High rating

P crop removal

■ V. High rating

No P app.

Elements of Kentucky P Index

- Soil Group (1)
- Field Slope % (1)
- Veg. Buffer (3)
- App. Timing (3)
- Distance to water (2)
- P soil test (3)
- Land cover % (3)
- Impaired water (1)
- App. Method (3)
- MLRA (1)

Nutrient Management Training

- Extension ENRI Task Force, Focus Group
- 12 members (Ext., state, Fed., KY FB, prod. org., agribusiness, etc.)
- Fully developed & implemented training
- Three Phases – I, II, & III

Nut. Mgt. Training Phases

- Phase I – technical material: soils & water
 - Started 11/2000, workshops for professionals
 - <http://www.ca.uky.edu/enri>
 - <http://www.nrcs.usda.gov/technical/efotg/>

Nut. Mgt. Training Phases

- Phase II: Example nutrient budgets for 4 species (Being put on website). 1 day
- Phase III: On-farm assessment & plan writing. 1 day

Nutrient Mgt. Implementation

- AWQP – 10/23/2001
- No regulation or certification of Plans
- Cons. Districts have 57,800 vol. cert.
- Corrective Measures – 110 farms
- Extra attention: 80% of KY residents get drinking water from surface streams or impoundments (challenges with nutrients, pesticides & bacteria)

Soil Testing Issue

- Good indicator for small area or field
- Watershed basis ?? (Sharpley research)
- Many KY soils sorb large amts. of P
- Natively high P in Bluegrass (400-800 lbs)
- Need to extend soil sorption research to more soil types

Nutrient Mgt. & P Issues

- Geology
- New state in broilers
- Swine => 1/3 no. now vs. 10 years ago
- Hay best crop for nutrient recycling
- More movement, sorption, desorption research needed in watersheds to test models for movement
- Lake fertilization by KDFWR

Nutrient Mgt. and P Issues

- 89,400 stream miles (2nd in US)
- 1st in beef cow numbers E. of MS River
- Streams are a major cattle water source
- KY NRCS assigned low priority for funding nutrient mgt. planning, thus low \$\$
 - Every farm req. to have AWQP w/nut. mgt.

Nutrient Mgt. and P Issues

- Most animal waste recycled to land
- Considerable broiler litter transported to MO Delta
- 3 or 4 counties need greater attention for use of layer & broiler waste
- Wildlife interest will challenge buffer effectiveness for water quality