

# Ag Modeling Subcommittee update

Water Quality GIT

April 13, 2015

## Decisions to date

- AAPFCO fertilizer sales will be combined with Ag Census fertilizer expenditures to estimate total fertilizer use in a county.
- USDA-NASS annual yields and acres for major crops will be incorporated where possible. For non-major crops and where data is not available, Ag Census yields and acres will be used.
- Best 3 out of the last 5 available data points (either NASS yearly data or Ag Census 5-year data) will be used to estimate application yield goal.
- Utilize methods approved for estimating poultry litter nutrient production for cattle and hogs. Approach for layers and pullets used, unless state-specific manure production/nutrient concentration data are provided.

## Decisions to date

- Ag Land Uses
  - Initial list approved by the WQGIT in Nov. 2014, with provision that list could be condensed depending on available data on loading rates
  - Condensed list approved by Ag Workgroup 3/18/15
    - Removed soil cover considerations
    - Condensed specialty crops to high and low nutrient requirements
    - Maintained manured eligible/non-eligible categories

# Revised Ag Land uses

Phase 6.0 Ag Land Uses	Manure Eligibility	Notes
Corn or Sorghum, Grain	Yes	Grain with or without manure/litter
Corn or Sorghum, Silage	Yes	Silage with or without manure/litter
Corn or Sorghum, Grain	No	Grain without manure
Corn or Sorghum, Silage	No	Silage without manure
Sm. Grain + Soybean	No	Small grain + soybean double crop, without manure
Sm. Grain + Grain/Forage	Yes	Small grain + forage or grain double crop, with manure
Soybean, Full season	No	Full season, without manure
Other Agronomic Crops	Yes	Large acreage crops (i.e. tobacco, cotton, peanuts)
Hay, Legume	Yes	Legume hay and grass-legume mixtures
Hay, Other	Yes	Grass and all other non-legume hay
Pasture	Yes	All grazed land, direct manure deposit
Specialty Crop, high input	Yes	Small tracts, high nutrient use (i.e potato, sweet corn)
Specialty Crop, low input	Yes	Small tracts, low nutrient use (i.e. peas, grapes, nursery)
Ag Open Space	No	Small tracts, little or no nutrient use
Permitted (or NOI) feeding Op.	No	Based on Permit data
Non-permitted feeding Op.	No	Based on Imagery data
Impervious farmstead	No	Based on Imagery data
Pervious farmstead	No	Based on Imagery data

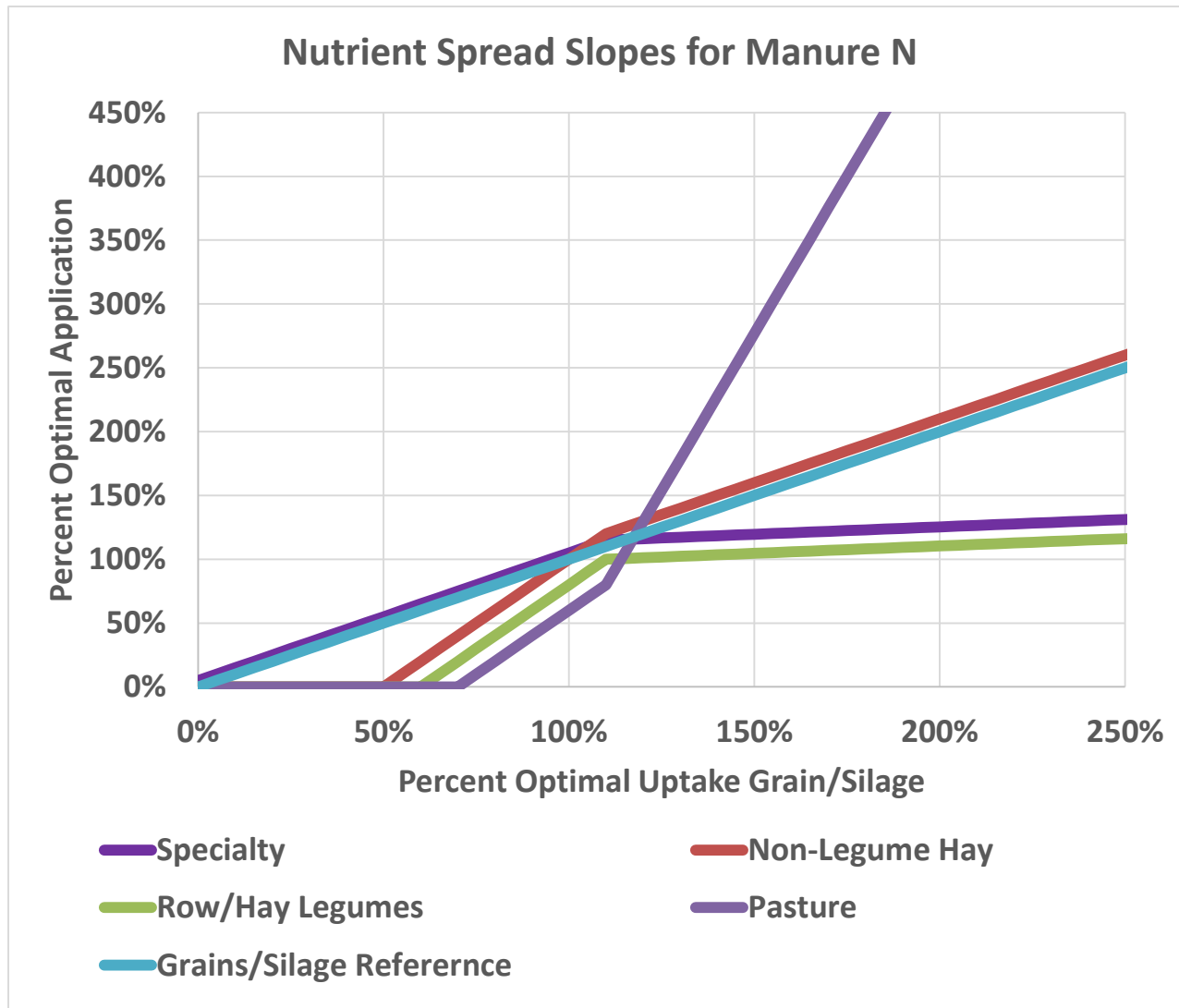
## Current work

- Develop Scenario Builder Nutrient Spread procedure
- Review application timing and rate fractions
- Update mineralization, uptake, and legume fixation numbers

# Subcommittee's Nutrient Spread Criteria

- Apply manure first
- Row crops (especially corn) priority application
- Make direct deposition available to meet pasture need
- Apply fertilizer for applications that are specified as fertilizer-only before applying fertilizer elsewhere
- Use state-supplied application rates, acres of crops, and estimated yield application goals to determine application need
- Spread all estimated manure and fertilizer in each county regardless of crop requirement (manure transport should be accounted for if reported)
- Both N-based and P-based approaches available

# Applying Nutrients Relative to Row Crop Requirements



- Approach received the blessing of AgWG
- Exact break points and slopes are being determined