Agricultural Modeling Subcommittee Update to Ag Workgroup

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Issues approved, or pending approval, under development

- Nutrient spread curves (approved)
- Size of other cattle (approved)
- Yield goal multiplier (approved)
- Ammonia volatilization (approved)
- Double crops (approved)
- **Future NM and Manure Transport (pending approval)**
- Confinement fractions (under review)
- Biosolids (under development/review)
- Outliers in Ag Census data (under development/review)
- STAC Review results (under development/review)

Questions for Ag Workgroup for Beta 4

- How should credit be given for additional acres of **nutrient management** (beyond 2012)?

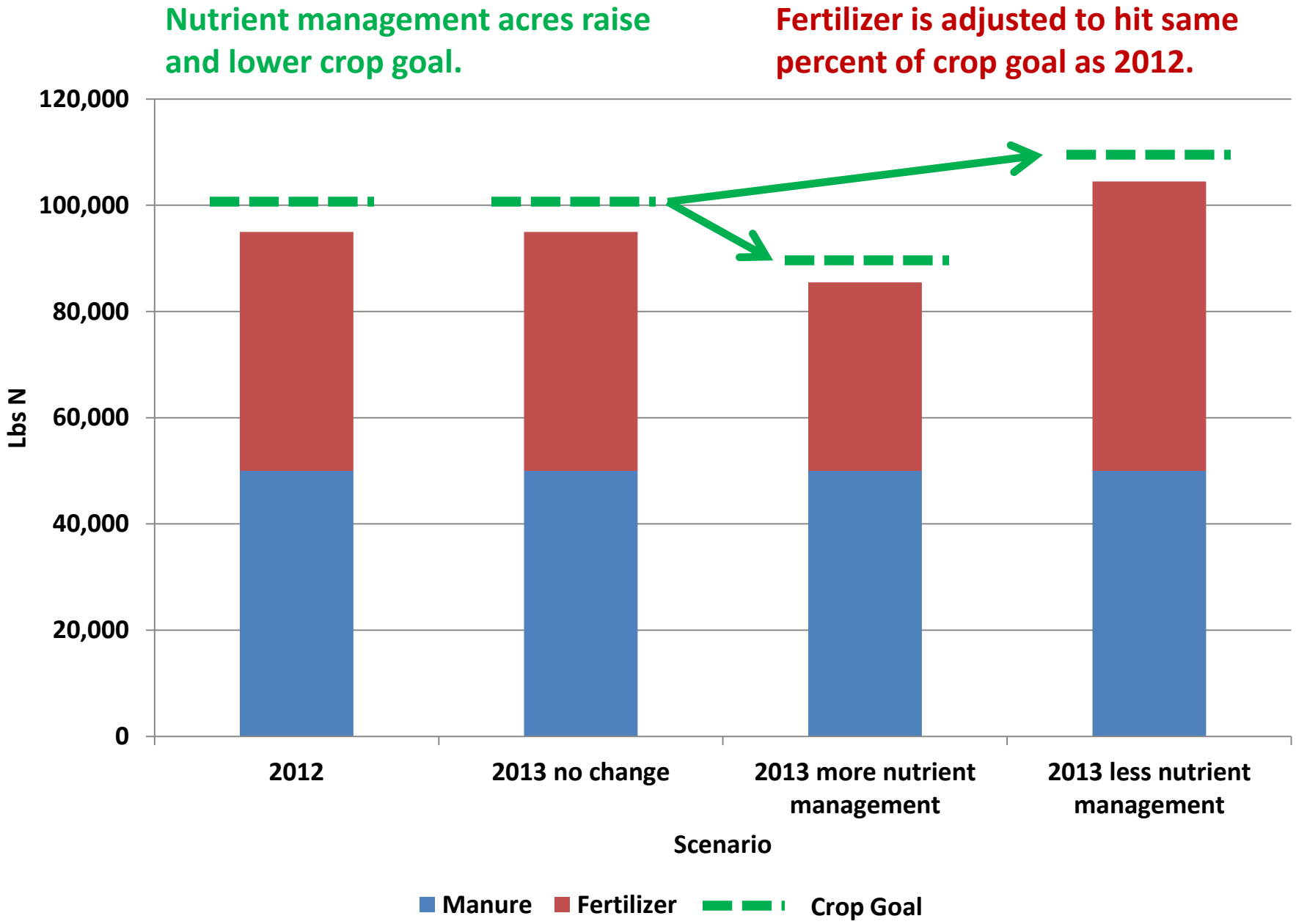
- AMS considered the logic behind two options:
  - Option 1) **Project fertilizer** applications at county level based upon historic county fertilizer estimates.
  - Option 2) Assume **same percent application**-to-crop goal as 2012, and reduce crop goal based upon acres of core NM.

- AMS leaning toward Option 2 (**same percent application**).

Advantages of Option 2

- Direct benefit for future expansion of nutrient management planning.
- Fertilizer estimates are not based upon past sales, but upon future crop goal, allowing for crop projections to rise or fall without fertilizer projections going in the opposite direction.

Crediting Nutrient Management with Constant % Application



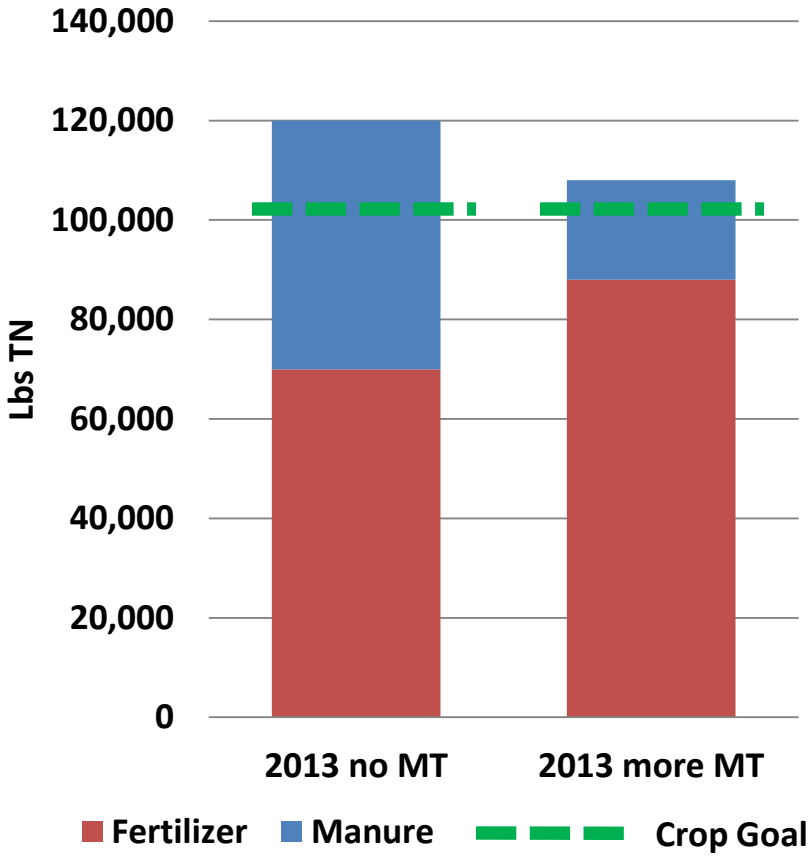
Questions for Ag Workgroup for Beta 4

- How should credit be given for additional manure transport (beyond 2012) in counties where nutrients **exceed** crop goal?
- How should credit be given for additional manure transport (beyond 2012) in counties where nutrients **do not exceed** crop goal?

- AMS recommends the following for every county:
  - Every additional **pound of manure PAN** transported out of a county should be replaced with **one pound of inorganic PAN**.
  - Every additional **pound of manure P** transported out of a county should be replaced with **0 pounds of inorganic P**.

Crediting Manure Transport

Total Nitrogen

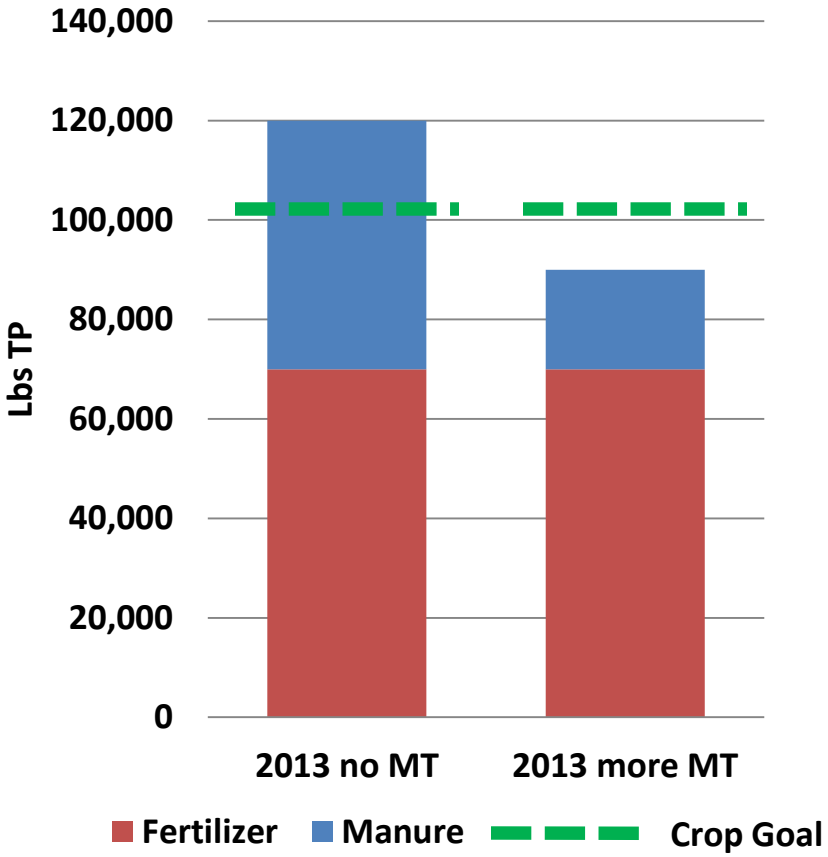


Manure decreases.

Fertilizer increases at a 0.6:1 ratio.

Total applications-to-crop goal decrease.

Total Phosphorus



Manure decreases.

Fertilizer remains constant.

Total applications-to-crop goal decrease.

Advantages of Manure Transport Methods

- Reflects more efficient use of N.
  - In 2012, every 1 lb of manure TN transported would be replaced with 0.6 lbs of inorganic TN (40% reduction in inputs, on average across watershed).
  - Value can vary by county and manure type being transported.
- Reflects likely current and future limits on use of P.
- Incentivizes manure transport for both nutrients and provides clear assumptions for trading credits if partners choose to use model's methodology.

Additional Comments from AMS on Methods

- Thorough **testing** needed for both recommendations after Beta 4 release.
- Jurisdictions should have opportunity to assume **% reduction in inorganic fertilizer** inputs in planning scenarios just as they may with nutrient concentrations for poultry.
- Fertilizer trends due to BMPs should be **checked with fertilizer sales** and use data as it becomes available in the future.
  - Frequency of check could be once per Milestone period.