Maximizing Forage Yield with Soil Testing and Fertilization

Brian Arnall
Nutrient Management Extension
Topics

• Deficiency ID with Pete Sheets
• Fertilizing on a Budget
• Fall applied litter
• Litter and commercial fertilizer
This years Considerations

• Do not give up on the summer pasture
• But it is time to start looking at planning for fall growth especially in the Drier areas.
Fertilizing on a Budget

• Multiple approaches / scenarios
• First need some info
  – Yield history or potential
  – Soil Test: P, K, and pH
• Each scenario may have multiple options
• The correct option will be producer and environment dependent
Fertilizer on a Budget

• Scenario 1: Soil test show P and K adequate in all fields

• Option 1: Maximize yield and quality on limited acres
  – Choose field(s) with highest yield potential and only fertilize them to maximize yield.

• Option 2: Maximize return on each lb of N.
  – Or apply 50 lbs N ac per field over all fields.
Fertilizer on a Budget

- Scenario 2: Soil test show P is low in some/all fields while K is adequate.
  - Look at the sufficiency level of P on each field.
  - How much are you losing and how much to apply

<table>
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<th>STP</th>
<th>% Suf</th>
<th>P$_2$O$_5$</th>
<th>STK</th>
<th>% Suf</th>
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Fertilizer on a Budget

• Option 1: Max yield and quality with Nitrogen
  – Only apply N to the fields that have the highest P level.

• Option 2: Correct P deficiency
  – Apply P to the lowest values only and some N to select fields.
  – Apply litter to low P fields and commercial N to rest
Fertilizer on a Budget

• Scenario 2: Soil test show both P and K are low.
  – Look at the sufficiency level of P on each field.
  – How much are you losing and how much to apply
  – Keep in mind Total loss is P * K
  – P @ 60% and K @ 70% = 42% of Max yield
  – @ <50% max yield recovery of N investment will be low
Fertilizer on a Budget

• Option 1: Fertilize the worst field
  – Fertilize the field with the worst % Max yield

• Option 2: Fertilize the lowest Sufficiency
  – Fertilize with only P or K, which ever is impacting yield the most.

• Option 3: Focus on N
  – Fertilize the field(s) with the highest potential yield.
Fall Applied Litter

• Primarily concern is Nitrogen
• In Kentucky fall applied vs spring for forage
  – Incorporated no difference
  – Surface applied Fall ≥ Spring
• In Mississippi Fall v Spring for Corn
  – Fall < Spring, due to warm winters.
• Environment after application is Key to recovery.
Fall/Winter Applied Litter

• Best case Scenario(s):
  – Cold at application and through winter.
  – Few slow soaking rainfall events from fall to spring
    • P and K well incorporated
    • Little N is lost and readily available

• Worst case Scenario(s):
  – Warm at application and through winter.
  – Extremely Dry & Warm Winter
  – Very heavy rains, Very wet winter (leaching)
Balancing Litter & Fertilizer

• To maximize yield and quality a combination of Litter and Commercial Fertilizer.
• If you apply litter do not pay for Commercial P or K.
  – N only Urea or Ammonia Nitrate
  – Pgs 7 and 11 of Guide
• 2 ton of litter and 100 lbs of Urea
Thank you!!!