Items That Will Be Addressed

• Why analyze forages for nutrient content

• Sampling forages

• Understanding a nutrient analysis

• Using a nutrient analysis
Understanding a Feed Analysis:

- **NIR Analysis**
  - *Near Infrared Spectroscopy*
    - Not a chemical Analysis
    - Uses Infrared light spectrum
      - Reflectance/spectra collected from organic material
        » NIR methodology not good for measuring minerals
    - Analysis uses a library to determine nutrient content
      - The larger the library - the more accurate the results
  - Can get information back in 2 to 3 days
Quality of Forages Vary

- **Primary factor that impacts forage quality**
  - Maturity at harvest

- **Alfalfa**
  - Average CP = 15%
  - Average TDN = 56%

- **Native hay**
  - Average CP = 6%
  - Average TDN = 52%
What Quality Attributes Should Cow/calf Producers Test in Feeds/Forages?

- **Moisture**
- **Crude Protein**
  - Use book values for:
    - DIP and UIP
- **Energy (TDN)**
- **Nitrates**
  - Forages grown in drought conditions
  - Drought conditions and high nitrogen fertilization
Testing Feeds/Forages for Analysis

• Take a representative sample
  – Forages – probe

• Package properly
  – Don’t dry down
  – Squeeze air out of bag

• Fill out paperwork
  – Identify sample
  – NIR – identify what the sample is:
    • Alfalfa, warm-season grass hay, silage, etc
High Nitrates in Forges

*** Allow cattle to adapt to feeds that contain nitrates
- allows the rumen to build a population of bacteria that seek nitrates/nitrites and converts these by-products to ammonia (NH₃)

• Treatment
  - Methylene Blue IV
    • Converts methemoglobin back to hemoglobin
  - Purge rumen with saline or epson salts

• Measuring Nitrates
  - Nitrates (NO₃) – 10,000 ppm potentially toxic
  - Nitrate Nitrogen (No₃N) – 2,200 ppm potentially toxic
  - Potassium Nitrates (KnO₃) – 16,300 ppm potentially toxic
# Value of Feeding Losses in a Season per 20 Cow Feeder

<table>
<thead>
<tr>
<th>Feeding Waste, %</th>
<th>$70</th>
<th>$80</th>
<th>$90</th>
<th>$100</th>
<th>$110</th>
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<tr>
<td>0%</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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</tr>
<tr>
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<td>$200</td>
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<td>$314</td>
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<tr>
<td>25%</td>
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<td>$1,286</td>
<td>$1,429</td>
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