Manure Testing

WV Co. Agents Spring Meeting
Professional Development Session

April 15 -16, 2008

Tom Basden, Ed Rayburn, Craig Yohn and Roger Nestor
West Virginia University
Extension Service
Components of Manure Testing

• I. Sample Collection
• II. Chemical Analysis
• III. Interpretation
I. Sample Collection of Manure and Bio-Solids, (sludge)

- Liquids (< 5% solids) and Slurries (5-10% solids)
  - agitate tanks/pit thoroughly before sampling
  - collect sample a few feet below surface, at several locations
I. Sample Collection of Manure and Bio-Solids, (sludge)

- Semi-solid (10-25% solids) and Bedded-pack (> 25% solids)
  - make hole in surface crust
  - sample tube should reach well into the interior of storage system, sample several locations
I. Sample Collection of Manure and Bio-Solids, (sludge)

- Poultry Litter, Deep Stack (65% solids)
  - dig into pile 2-3 feet
  - collect small sample including manure feathers and bedding, sample several locations in the pile
I. Shipping and Packaging Samples

• Obtain mailing tubes, leak-proof plastic bottles and submission forms from WVDA Lab in Moorefield

• Fill bottles half full, leave air space
I. Shipping and Packaging Samples

- Samples are biologically active so keep them cool.
- Freeze if storing samples
- Mail out on Mondays and Tuesdays, avoid weekend layover
I. Manure Submission Form

• Fill out form accurately
• improves our database
• allows lab to ID and retest odd results
II. Manure Analysis
Test Parameters

• (N) Nitrogen (TKN)
• (P) Phosphate (P2O5)
• (K) Potash (K2O)
• Ammonia, subtract from TKN to get Organic Nitrogen fraction
II. Manure Analysis
Test Parameters

• C:N Ratio
• Moisture
II. Manure Analysis

Test Parameters

- Copper
- Calcium
- Magnesium
- NPK Availability during 1st year
II. Bio-Solids Analysis

Test Parameters

- TKN, Organic and Ammonia N
- P Phosphorus and K Potassium
- % Solids
- pH and Fecal Coliform count
III. Interpretation of Results

- Moorefield Lab results ready to plug into NMP
- Bio-Solids results in mg/kg on dry weight basis, need to convert to lb./ton or lb/1000gal.
III. Interpretation of Results

- A single sample can be used but running averages are better
- Take sample at each clean-out X4
- Every other year or if things change, such as bedding, feed or storage system