Livestock Waste Analysis Grower Report

Sample Type: Poultry broiler / broiler breeder waste from manure storage facility.
Crop or Use: Grasses for hay or silage, 4 cuts
Application Equipment: Applied by manure spreader
Incorporation: Material will not be incorporated within 24 hours.
Previous Applications: Manure was applied to field last year.

Cleanout was 1-3 months ago.

***Nutrient Content in Manure as Delivered to Laboratory

<table>
<thead>
<tr>
<th>Nutrient Constituent</th>
<th>Raw Sample</th>
<th>Adjusted For Application Losses of N</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen (N):</td>
<td>32</td>
<td>23</td>
<td>lbs/ton</td>
</tr>
<tr>
<td>Phosphorus (P2O5):</td>
<td>109</td>
<td>109</td>
<td>lbs/ton</td>
</tr>
<tr>
<td>Potassium (K2O):</td>
<td>115</td>
<td>115</td>
<td>lbs/ton</td>
</tr>
</tbody>
</table>

ph as Sampled: 9.0
Moisture Content: 22%
Total Solids: 78%
Total Ash: 43%

***Total Nutrient Requirement for:
Grasses for hay or silage, 4 cuts

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>lbs N/acre</th>
<th>lbs P2O5/acre</th>
<th>lbs K2O/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>320</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

Nutrient Constituent Raw Sample Adjusted For Application Losses of N Units

Fertilizer Equivalent in Manure (As Is)

N-raw 32
N-adj 23
P2O5 109
K2O 115

N-raw P2O5 K2O

Nitrogen Recommendation Base

***Manure application rate (As Is) to supply crop N requirement:
13.9 tons/acre

By supplying the crop N requirement at the rate shown above, the following total nutrients will be applied:
320 lbs N/acre
1522 lbs P2O5/acre
1596 lbs K2O/acre

Supplemental nutrients needed:
0 lbs N/acre
0 lbs P2O5/acre
0 lbs K2O/acre

***Economic value of manure at the rate shown above:
N $272 per acre
P2O5 $98 per acre
K2O $53 per acre

***Cost of additional nutrients needed:
$0 N per acre
$0 P2O5 per acre
$0 K2O per acre

Phosphorus Recommendation Base

***Manure application rate (As Is) to supply crop P requirement:
0.7 tons/acre

By supplying the crop P requirement at the rate shown above, the following total nutrients will be applied:
17 lbs N/acre
80 lbs P2O5/acre
84 lbs K2O/acre

Supplemental nutrients needed:
303 lbs N/acre
0 lbs P2O5/acre
0 lbs K2O/acre

***Economic value of manure at the rate shown above:
N $14 per acre
P2O5 $98 per acre
K2O $53 per acre

***Cost of additional nutrients needed:
$258 N per acre
$0 P2O5 per acre
$0 K2O per acre

*** Assumptions are shown in footnotes on Page 2. Prices Updated on: 10/20/2008
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Laboratory Results (All weights are based on sample weight as received)

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (mg/kg)</th>
<th>Percentage</th>
<th>Unit (lbs/ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Solids</td>
<td>781100</td>
<td>78.1%</td>
<td>1562</td>
</tr>
<tr>
<td>Total Ash</td>
<td>430200</td>
<td>43.0%</td>
<td>860</td>
</tr>
<tr>
<td>Total Kjeldahl N</td>
<td>16120</td>
<td>1.61%</td>
<td>32.2</td>
</tr>
<tr>
<td>Ammonia Nitrogen</td>
<td>2118</td>
<td>0.21%</td>
<td>4.2</td>
</tr>
<tr>
<td>Total Elemental P</td>
<td>24040</td>
<td>2.40%</td>
<td>48.1</td>
</tr>
<tr>
<td>Total Elemental K</td>
<td>47531</td>
<td>4.75%</td>
<td>95.1</td>
</tr>
<tr>
<td>Moisture</td>
<td>21.89%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>9.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Total Kjeldahl Nitrogen is equivalent to Total N for manure and high organic samples

Estimated Nitrogen Losses:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (lbs/ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Content of Sample as Tested:</td>
<td></td>
</tr>
<tr>
<td>***N-losses during application:</td>
<td>32.2</td>
</tr>
<tr>
<td>***N-losses while awaiting incorporation:</td>
<td>1.6 lbs</td>
</tr>
<tr>
<td><strong>Other N-Losses:</strong></td>
<td>7.7 lbs</td>
</tr>
<tr>
<td>Estimated Available N:</td>
<td>71.3%</td>
</tr>
</tbody>
</table>

Footnotes:

Fertilizer Equivalent in Manure - The nitrogen value is an estimate based on inherent losses from using animal manures.

Total Nutrient Requirement For - This is the total N-P2O5-K2O recommended for the crop for a growing season assuming low P2O5 and K2O soil tests. Split applications of N and K2O result in more efficient nutrient use. For assistance in determining individual application rates, see your County Extension Agent, nutrient management specialist or Soil and Water Conservation District Technician.

Manure application rate - The maximum application rate that should be applied if it is split applied at least three times during this crop, and the amount applied in each application adjusted to crop intake. If single applications are used, then manure should be applied at 50% of the above rate with the remaining N requirement being met by supplemental fertilization. Sprayfields with frequent applications may also need an adjusted rate.

Economic Value - This is by nature a rough approximation meant for comparative purposes only. Since the value of N and P2O5 are by far the most important in determining economic value of manure, only these are considered in the calculations. The commercial values of N and P2O5 are estimated using ammonium nitrate at $580/ton, concentrated superphosphate (0-46-0) at $1120/ton, and potassium chloride (0-0-60) at $800/ton.

N-Losses during application - A loss of 25% is assumed for liquid samples with a pH above 7 and for situations where sprinklers are used for application. A standard loss of 5% is assumed for all other materials and situations.

N-Losses while awaiting incorporation - It is assumed there will be no N loss to volatilization if solid or slurry manures are incorporated within 24 hours and a 25% loss if they are not. Liquid applications are considered to have an additional 25% volatilization loss before stabilization in soil.

Other N-Losses - A 50% reduction in N availability is calculated whenever a manure having an ammonia to organic nitrogen ratio less than or equal to 1 is applied to a field where manure was not applied the previous year. Regular soil testing is recommended where manures are applied often.