Tutorial 3:
Data Entry Pointers – Storages, Animals, Rations, Manure Analysis, and Equipment
Getting Started in MMP CROPS INPUT

“Click” on Storage after entering crops and yield goal.
Getting Started in MMP
STORAGE INPUT

Identify all sources of manure.
Getting Started in MMP

STORAGE INPUT

Use key entry and drop down boxes to identify all sources.
Getting Started in MMP

STORAGE INPUT

There are three manure storages on this farm.

<table>
<thead>
<tr>
<th>Storage ID</th>
<th>Storage Type</th>
<th>Units</th>
<th>Pumpable Or Spreader Capacity</th>
<th>Manure On Hand At Start Of Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poultry houses</td>
<td>Poultry litter</td>
<td>Ton</td>
<td>300</td>
<td>0 Two buildings</td>
</tr>
<tr>
<td>Stackhouse</td>
<td>Poultry litter</td>
<td>Ton</td>
<td>226</td>
<td>180 Buildings cleared in Sept.</td>
</tr>
<tr>
<td>Compost</td>
<td>Poultry litter</td>
<td>Ton</td>
<td>32</td>
<td>12 Mortality composters</td>
</tr>
</tbody>
</table>
• Capacity based on designed capacity of storage.

• Poultry house has no real capacity so I arbitrarily entered value that was larger than annual production.
Getting Started in MMP

STORAGE INPUT

- Manure on hand
  - This operation cleans buildings in Sept. with transfer to stackhouse.
  - Plan starts in October with all that litter in the stackhouse.
  - Compost value reflects bins ~35% full.
Getting Started in MMP STORAGE INPUT

“Click” on Animals.
Getting Started in MMP
ANIMAL INPUT

Enter animal numbers and designate where the manure goes.
Getting Started in MMP

ANIMAL INPUT - TIPS

Use this panel to show where animals deposit manure:

• Use “Where will manure be stored” to identify the storage(s) receiving manure directly from animals.

• Manure transfers from one storage to another done on another page (Nutrient Management).

See Tutorial 5: Distributing manure – Manure transfers
Getting Started in MMP

ANIMAL INPUT - TIPS

This panel not that important in dry litter systems:
- Data used to estimate manure volumes.
- MMP sometimes does a poor job of estimating litter volumes.

All litter collected but birds are not always there:
- We reduce time animals are in barn to 80% because of time between flocks.
- (6 flocks/year)
  \[ X \text{ (12 days empty/turn) / (365 days/yr)} = 0.2 \]
Getting Started in MMP
ANIMAL INPUT

Pick list based on storages and sources you created on “Storage” page

- On this operation all manure from animals initially collected in poultry houses.
Getting Started in MMP

STORAGE INPUT

“Click” on Analysis (we will not use Rations).
### Getting Started in MMP

#### ANALYSIS INPUT

Below is a table showing the manure test results and volume of manure production.

<table>
<thead>
<tr>
<th>Storage ID</th>
<th>Estimated Total N</th>
<th>Estimated NH₄-N</th>
<th>Estimated PO₄-P2O₅</th>
<th>Estimated K₂O</th>
<th>Analysis Units</th>
<th>Estimated Manure Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poultry houses</td>
<td>12.6</td>
<td>3.5</td>
<td>15.6</td>
<td>12.2</td>
<td>Lb/Ton</td>
<td>2,298 Ton/Year</td>
</tr>
<tr>
<td>Stackhouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If available, enter a manure analysis total N to use instead of the estimate.
Getting Started in MMP

ANALYSIS INPUT

Program sometimes does a poor job of estimating manure test results and production in dry litter systems.
Getting Started in MMP ANALYSIS INPUT

Move to the right to enter actual farm data.
Getting Started in MMP ANALYSIS INPUT

- Enter manure analysis here.
- Program automatically provides estimate of nutrient availability.
- Nutrient availability calculations are state-specific. This tutorial uses Missouri for an example.
Getting Started in MMP
ANALYSIS INPUT - TIPS

In Missouri:

Plant Available N (PAN) =

Organic N \times k_1

+ NH_4-N \times (k_2)

k_1 = \text{Mineralization or Organic N release (Table 3)}

(k_2) = \text{DNR ammonium availability (VR) factor (Table 4)}
### Getting Started in MMP

**ANALYSIS INPUT - TIPS**

**Table 3. Missouri DNR organic N availability factors**

<table>
<thead>
<tr>
<th>Time after appl.</th>
<th>All Lagoons</th>
<th>Liquid basins except poultry</th>
<th>Poultry dry and liquid basins</th>
<th>Manure with bedding (no poultry)</th>
<th>Manure w/o bedding (no poultry)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 yr</td>
<td>0.35</td>
<td>0.35</td>
<td>0.60</td>
<td>0.25</td>
<td>0.35</td>
</tr>
<tr>
<td>2 yrs</td>
<td>0.18</td>
<td>0.18</td>
<td>0.10</td>
<td>0.13</td>
<td>0.18</td>
</tr>
<tr>
<td>3 yrs</td>
<td>0.09</td>
<td>0.09</td>
<td>0.05</td>
<td>0.07</td>
<td>0.09</td>
</tr>
<tr>
<td>Total</td>
<td>0.62</td>
<td>0.62</td>
<td>0.75</td>
<td>0.45</td>
<td>0.62</td>
</tr>
</tbody>
</table>
## Getting Started in MMP

### ANALYSIS INPUT - TIPS

**Table 3. Missouri DNR ammonia N availability factors**

<table>
<thead>
<tr>
<th></th>
<th>Subsurface injection</th>
<th>Surface applied Incorporated</th>
<th>Surface applied not incorporated</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.95</td>
<td>0.90</td>
<td>0.60</td>
<td></td>
</tr>
</tbody>
</table>


Getting Started in MMP ANALYSIS INPUT

Measure “Max” available N by year.

- This value includes year 1 organic N mineralization and assumes no loss of ammonia N.
- \((46 - 3) \times 0.6 + 3 = 28.8 \text{ lbs N/ton PAN}\)
- This is not the value that is used in calculations; value will be further adjusted for ammonia loss based on manure placement.
Getting Started in MMP
ANALYSIS INPUT

Be sure to enter estimate of manure production.

- Program uses entered manure test and production values over numbers estimated by the program.
- Program sometimes does a poor job of estimating manure test values for dry litter systems and manure production values for almost all systems.

Enter manure test date and source
Getting Started in MMP
STORAGE INPUT

“Click” on Equipment.
Getting Started in MMP
EQUIPMENT INPUT

Enter manure application equipment specifications.
Getting Started in MMP

EQUIPMENT INPUT

**Congratulations... Data input is complete!!**
Congratulations
You finished the Tutorial 3! Please be sure to save your work.