Choose the livestock facility from the stack of AFOs that most closely matches the manure you have available. Find the Manure Analysis that corresponds with your chosen facility. Review application and incorporation information on the facility record to help with this worksheet.

**Step 1:** Using the Manure Analysis, find the following information and fill in the table below.

| As-Is Organic N | As-Is Ammonium N | As-Is $P_2O_5$ | As-Is $K_2O$ | As-Is Sulfur |
|---|---|---|---|---|
| _____ | _____ | _____ | _____ | _____ |

**Add these numbers to the "As-Is" line of the facility record**

**Table 2.** Fraction of ammonium nitrogen available this year.

*Sidedress Application*
  Injected                    0.95
  Sprinkler Irrigated    0.80 (if >0.4" applied) or 0.40 (if ≤0.4" applied)
*Preplant Application and Not Incorporated*
  Surface – spring or fall        0.00
*Preplant Application and Incorporated*

**Table 1.** Fraction of organic nitrogen available this year.

| | | | Solid | Liquid Applied When Air Temp > 50˚F | Liquid Applied When Air Temp ≤50˚F |
|---|---|---|---|---|---|
| *Beef/Dairy Manure* | | | | | |
| Solid or Stored liquid | 0.40 | | | | |
| Composted feedlot | 0.15 | Immediately | 0.95 | 0.95 | 0.95 |
| *Poultry Manure* | | One day later | 0.50 | 0.70 | 0.70 |
| Layers with no bedding | 0.45 | Two days later | 0.25 | 0.45 | 0.55 |
| All other poultry | 0.40 | Three days later | 0.15 | 0.25 | 0.45 |
| *Swine Manure* | 0.40 | Seven or more days later | 0.00 | 0.00 | 0.25 |

**Step 2:** Determine the Organic N Available the FIRST YEAR from the manure by using the below formula and Table 1 above.
*Organic N Available = Availability factor x As Is Basis Organic N in sample (lbs/ton)*

_____ x _____ (lbs/ton) = _____ (lbs/ton)
    (From Table 1)       (From As-Is Sample)       **Organic N Available First Year**

**Step 3:** Determine the Ammonium N Available the FIRST YEAR from the manure by using the below formula and Table 2.
*Ammonium N Available = Availability factor x As Is Basis Ammonium N in sample (lbs/unit)*

_____ x _____ (lbs/unit) = _____ (lbs/ton)
    (From Table 2)      (From As-Is sample)       **Ammonium N Available First Year**

**Step 4:** Add the Ammonium N Available and the Organic N Available to get Total N Available the FIRST YEAR.
*Total N Available this year = Ammonium N Available + Organic N available*

_____ (lbs/ton) + _____ (lbs/ton) = _____ (lbs/ton)
    Organic N Available              Ammonium N Available            **Total N Available First Year**
    (from Step 2 above)             (from Step 3 above)

*-Continue to step 5 on the next page-*

**Step 5:** $P_2O_5$ is 70% available the first year. Using this and the formula below, determine the amount of $P_2O_5$ available the FIRST YEAR.

*$P_2O_5$ Available this year = Availability factor x As Is Basis $P_2O_5$ in sample (lbs/unit)*

0.70  x  _____ (lbs/unit) = _____ (lbs/unit)
             (from As-Is sample)           **$P_2O_5$ Available First Year**

**Step 6:** $K_2O$ is 80% available the first year. Using this and the formula below, determine the amount of $K_2O$ available the FIRST YEAR.

*$K_2O$ Available this year = Availability factor x As Is Basis $K_2O$ in sample (lbs/unit)*

0.80  x  _____ (lbs/unit) = _____ (lbs/unit)
             (from As-Is sample)          **$K_2O$ Available First Year**

**Step 7:** Sulfur is 55% available the first year. Using this and the formula below, determine the amount of sulfur available the FIRST YEAR.

*S Available this year = Availability factor x As Is Basis S in sample (lbs/unit)*

0.55  x  _____ (lbs/unit) = _____ (lbs/unit)
             (from As-Is sample)          **S Available First Year**

**Add the totals on steps 2, 3, and 5 through 7 to the Facility Record in the "Crop Available This Year" line.**

**STOP** **for Group Discussion**

**Step 1:** Ammonium N is not available after the first year of application, however, Organic N becomes available over time. Determine the FUTURE Organic N Available following application of manure by using the formula and Table 3 below.

*Organic N Available  =  Availability factor  x  As Is Basis Organic N in sample (lbs/unit)*

Table 3.

| Growing Season after manure application | Availability Factor | Organic N in Original Sample | Organic N Available |
|---|---|---|---|
| 2nd | 0.20 | x _____ = | |
| 3rd | 0.10 | x _____ = | + |
| 4th | 0.05 | x _____ = | + |
| | | **Total Organic N Available in the Future** | |

**Step 2:** It can be assumed that the remainder of $P_2O_5$, $K_2O$, and Sulfur become available over several years following manure application. Determine the FUTURE nutrients available following application of manure by using the formula and Table 4 below.

*Remainder of Nutrient Available  =  As Is Basis Organic N in sample (lbs/unit)  -  Nutrient Available FIRST YEAR*

Table 4.

| Nutrient | As Is Basis of Nutrient in sample (lbs/unit) | First Year Availability (from the previous worksheet) | Remainder Available |
|---|---|---|---|
| $P_2O_5$ | _____ - | _____ = | |
| $K_2O$ | _____ - | _____ = | |
| Sulfur | _____ - | _____ = | |

**Step 3: Add totals from steps 1 and 2 to the Facility Record in the "Crop Available in Future" line.**

**Step 4:** Calculate the Potential Fertilizer Value on the Facility Record.

*Potential Fertilizer Value  =  (Crop Available This Year + Crop Available in Future)  x  Nutrient Value*

| Nutrient | Lbs Available 1st Year | Lbs Available in Future | Total Lbs of Value | Fertilizer Value ($/lb) | Potential fertilizer value |
|---|---|---|---|---|---|
| Organic N | _____ + | _____ = | _____ | x _____ = | |
| Ammonium N | _____ | _____ = | _____ | x _____ = | |
| $P_2O_5$ | _____ + | _____ = | _____ | x _____ = | |
| $K_2O$ | _____ + | _____ = | _____ | x _____ = | |
| Sulfur | _____ + | _____ = | _____ | x _____ = | |

**Step 5: Add these numbers to the Facility Record in the "Potential Fertilizer Value".**