

This work sheet is used to calculate the amount of crop available nutrients to credit warm season crops in the year of manure application. For solid manure, most laboratories report the amount of nutrients on an as-received moisture basis (pounds nutrient per ton), while the nutrient contents for liquid manure systems are normally reported on a thousand gallon or acre-inch basis (pounds nutrient per 1,000 gallons or acre-inch). Once the amount of manure nutrients available for the crop is estimated and the amount of nutrients required for the crop production system is determined then the amount of manure to uniformly apply can be calculated. This work sheet and more information can be found in *Estimating Manure Nutrient Availability*, MF-2562.

## Solid Manure Example

### Solid Beef Manure Analysis

Total N – 10 lbs/ton

Organic N – 6 lbs/ton      Ammonium N – 4 lbs/ton

Total P<sub>2</sub>O<sub>5</sub> – 8 lbs/ton      Total K<sub>2</sub>O – 12 lbs/ton

### Management Information

P Soil Test - Low

Broadcast Manure Application

Incorporated Day after Application

1. Estimate 65% of ammonium available to crop – 35% volatilization loss (from Figure 2).  
4 Lbs ammonium N/ton × 65% = 2.6 lbs available ammonium N/ton
2. Credit 25% of organic N available in year of application (from solid manure work sheet)  
6 Lbs organic N/ton × 25% = 1.5 lbs available organic N/ton
3. Total organic N credit and ammonium N credit for total N credit  
2.6 lbs ammonium N + 1.5 lbs organic N = 4.1 Lbs total available N/ton
4. Credit 50% of total P<sub>2</sub>O<sub>5</sub> available (very low, low, medium P soil test – from Figure 1)  
8 lbs P<sub>2</sub>O<sub>5</sub>/ton × 50% = 4.0 lbs available P<sub>2</sub>O<sub>5</sub>/ton
5. Credit 85% of total K<sub>2</sub>O available (from work sheet)  
12 lbs K<sub>2</sub>O/ton × 80% = 10.2 lbs available K<sub>2</sub>O/ton

### *Solid Manure Nutrient Crediting Work Sheet*

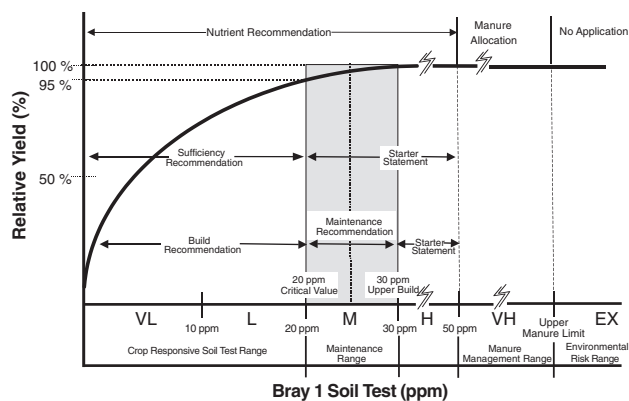
#### **Example**

	Manure Lab Results	×	Nutrient Availability Factor	=	Plant Available Nutrients
Organic N	<u>6</u> <i>(lbs/ton)</i>		<u>25%</u> Available In Year Of Application		<u>1.5</u> <i>(lbs/ton)</i> Organic N
NH <sub>4</sub> <sup>+</sup> -N	<u>4</u>		<u>65%</u> NH <sub>4</sub> <sup>+</sup> -N Availability Factor From Fig. 2		<u>2.6</u> NH <sub>4</sub> <sup>+</sup> -N
Total N	<u>10</u>				<u>4.1</u> Sum Of NH <sub>4</sub> <sup>+</sup> -N & Organic N
Total P <sub>2</sub> O <sub>5</sub>	<u>8</u>		<u>50%</u> 50% for Very Low to Low P Soil Tests 100% for Medium to Very High P Soil Tests		<u>4.0</u> Available P <sub>2</sub> O <sub>5</sub>
Total K <sub>2</sub> O	<u>12</u>		<u>85%</u> Potassium Efficiency Factor		<u>10.2</u> Available K <sub>2</sub> O

## Your Farm

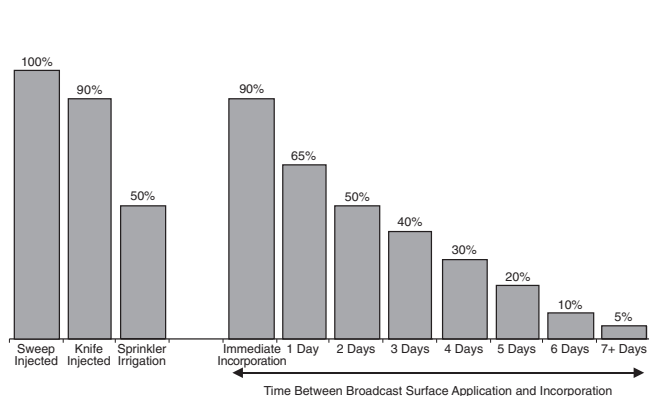
	Manure Lab Results (lbs/ton)	×	Nutrient Availability Factor	=	Plant Available Nutrients (lbs/ton)
Organic N	_____		25% Available In Year Of Application		Organic N
NH <sub>4</sub> <sup>+</sup> -N	_____		NH <sub>4</sub> <sup>+</sup> -N Availability Factor From Fig. 2		NH <sub>4</sub> <sup>+</sup> -N
Total N	_____				Sum Of NH <sub>4</sub> <sup>+</sup> -N & Organic N
Total P <sub>2</sub> O <sub>5</sub>	_____		50% for Very Low to Low P Soil Tests 100% for Medium to Very High P Soil Tests		Available P <sub>2</sub> O <sub>5</sub>
Total K <sub>2</sub> O	_____		85% Potassium Efficiency Factor		Available K <sub>2</sub> O

**Figure 1. Phosphorus Management Model for Kansas Crop Production and Manure Management**



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**Figure 2. Percent Of Inorganic N Available To Crops For Various Manure Management Systems**



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