

## Estimating Plant Available Nitrogen (PAN) in Manure

Manure \_\_\_\_\_

**1. Total nitrogen (N) content**

- Expressed as lbs./ton or lbs./1000 gallons.
- Obtain value from the manure analysis.

**2. Ammonium nitrogen (NH<sub>4</sub><sup>±</sup>) content**

- Expressed as lbs./ton or lbs./1000 gallons.
- Obtain value from the manure analysis.

**3. Organic nitrogen content**

- Expressed as lbs./ton or lbs./1000 gallons.
- Subtract ammonium nitrogen (NH<sub>4</sub><sup>±</sup>) content (**#2**) from total nitrogen (N) content (**#1**).

**4. Manure mineralization factor**

- Expressed as a decimal.
- Refer to the *Infocard*.

**5. Available organic nitrogen**

- Expressed as lbs./ton or lbs./1000 gallons.
- Multiply organic nitrogen content (**#3**) by the manure mineralization factor (**#4**).

**6. Ammonium conservation factor**

- Expressed as a decimal from 0 to 1.
- Depends upon incorporation practices.
- Refer to the *Infocard*.

**7. Available ammonium nitrogen**

- Expressed as lbs./ton or lbs./1000 gallons.
- Multiply ammonium nitrogen (NH<sub>4</sub><sup>±</sup>) content (**#2**) by the ammonium conservation factor (**#6**).

**8. PAN in manure**

- Expressed as lbs./ton or lbs./1000 gallons.
- Add the available ammonium nitrogen (**#7**) to the available organic nitrogen (**#5**).

Printed by the Agricultural Nutrient Management Program, February 2006