

# Understanding your compost nutrient analysis

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University of Minnesota Extension Educator



NDSU

EXTENSION



# Compost Analysis

## MANURE REPORT

SAMPLE:   
 TYPE: SOLID MANURE   
 SOURCE: BEEF   
 STORAGE:   
 LAB NUMBER:

DATE RECEIVED: 09/24/19   
 DATE REPORTED: 10/08/19   
 PO:

Moisture: 30%   
 Dry Matter: 70%

	Dry Basis	As Received	lb/ton As Received
Total Nitrogen (N):		1.0%	20
Ammonium Nitrogen:		0.0084%	0.17
Nitrate Nitrogen:		0.013%	0.26
Inorganic Nitrogen:		0.021%	0.43
Organic Nitrogen:		0.99%	20
Phosphate (P <sub>2</sub> O <sub>5</sub> ):	0.63%	0.44%	8.8
Potash (K <sub>2</sub> O):	2.1%	1.5%	30
Sodium:	0.29%	0.20%	4.0
Calcium:	1.1%	0.77%	15
Magnesium:	0.69%	0.48%	9.7
Zinc:	89 ppm	62 ppm	0.12
Iron:	9225 ppm	6465 ppm	13
Manganese:	431 ppm	302 ppm	0.60
Copper:	20 ppm	14 ppm	0.029
Sulfur:	0.21%	0.14%	2.9
pH:		8.5	
Salts:		7.4 mmhos/cm	
Total Carbon:		11%	



# Moisture and Dry Matter

- Represented as %
- Moisture + Dry matter = 100
- High moisture compost will be harder to spread

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# Report columns

- **Dry basis:** measure/amount when moisture has been removed
- **As received:** measure/amount with moisture as is
- **Lb/ton:** calculated based on “as received” column. Use for application calculations

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# Nitrogen

- Total Nitrogen: Sum of ammonium, nitrate, and organic N
- Raw manure contains ammonium and organic N
- Composted manure mostly contains organic N

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# Phosphorus

- Reported as  $P_2O_5$  or P
- If reported as P, convert to  $P_2O_5$  by multiplying by 2.29

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# Potassium

- Reported as  $K_2O$  or K
- Convert K to  $K_2O$  by multiplying by 1.2

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# Other Nutrients

- Test if concerned about nutrient deficiency
- High sodium (>1% dry basis) can damage plants

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# pH

- Acidity/alkalinity
- Manure compost tends to be alkaline

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# Salts

- Soluble salts in the compost
- High salts can damage plants

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# Total Carbon and Carbon to Nitrogen Ratio

- Measure of organic and inorganic carbon
- Use to estimate C:N
  - Optimal C:N is 25:1 to 30:1

# Which Tests to Order

- Minimum for compost:
  - Moisture
  - Total Nitrogen
  - Inorganic/ammonium Nitrogen
  - Phosphorus
  - Potassium

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*Thank you!*