Nitrogen Fertilizer Sources
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Read the label to determine what nitrogen sources are in your fertilizer

General label information →
Analysis (% N - % P₂O₅ - % K₂O) →
Total product weight →
Percentage Nitrogen →

% P₂O₅: P₂O₅ x .44 = % Avail. P →
% K₂O: K₂O x .83 = % Avail. K →
% other nutrients →

Materials used to compose the fertilizer →

Dave’s Premium Fairway
24 - 4 - 12
50 LB
Total Nitrogen (N).............................................. 24.0%
1.6% Ammoniacal Nitrogen
10.8% Water-Insoluble Nitrogen
11.6% Water-Soluble Urea Nitrogen
Available Phosphoric Acid (P₂O₅)....................... 4.0%
Available Potash (K₂O)...................................... 12.0%
Sulfur (S).............................................................. 5.0%

Derived from Isobutylene diurea, ammonium phosphate, and potassium sulfate. Potential acidity 0 lb. calcium carbonate equivalent per ton.

Inorganic Nitrogen Sources

Ammonium Nitrate
(NH₄)NO₃
34 - 0 - 0

Ammonium Sulfate
(NH₄)₂SO₄
21 - 0 - 0
24% S

Calcium Nitrate
Ca(NO₃)₂

Monoammonium Phosphate
(NH₄)H₂PO₄
11 - 48 - 0

Diammonium Phosphate
(NH₄)₂HPO₄
18 - 46 - 0

Potassium Nitrate
KNO₃
13 - 0 - 44

Advantages
Disadvantages
• Quick release
• Rapid low temperature response
• Relatively inexpensive
• Liquid or granular forms
• Higher leaching potential
• Short residual (< 30 days)
• Difficult to apply
  • High physiological burn potential
  • Hygroscopic
Natural Organic Sources (list is not inclusive)

**Corn Gluten Meal**
10 - 0 - 0

**Milorganite®**
Activated Sewer Sludge
6 - 2 - 0
4% Fe

**Ringers®**
Feather, Blood Meal
K₂SO₄, Bone Meal
10 - 2 - 6

**Sustane®**
Composted Turkey Litter
Feather Meal, K₂SO₄
5 - 2 - 4
2% Ca, 2% S

**Nature Safe®**
Feather Meal, Bone Meal, Blood Meal, Langbeinite, K₂SO₄
10 - 2 - 8

**Nature Pure®**
Composted Poultry Manure
3 - 5 - 3

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low burn potential</td>
<td>• Generally higher cost</td>
</tr>
<tr>
<td>• Slow release</td>
<td>• Not effective in cool weather</td>
</tr>
<tr>
<td>• Low leaching potential</td>
<td>• Require microbial activity for release</td>
</tr>
<tr>
<td>• Liquid or granular forms</td>
<td></td>
</tr>
</tbody>
</table>

Quick Release Synthetic Organic Source

**Urea**
CO(NH₂)₂
46 - 0 - 0

**Advantages**
- Water Soluble
- Inexpensive
- Rapid low temperature response

**Disadvantages**
- Moderate burn potential
- Moderate leaching potential
Slow Release Synthetic Organic Sources

- Several are reaction products of urea and formaldehyde. The chain length affects nitrogen release characteristics:

<table>
<thead>
<tr>
<th>Reaction Product</th>
<th>Example Trade Name</th>
<th>Water Soluble</th>
<th>Solubility Class</th>
<th>Microbial Degradation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monomethylol urea</td>
<td>CoRon®</td>
<td>Yes</td>
<td>CWSN</td>
<td>Some</td>
</tr>
<tr>
<td>Methylene diurea</td>
<td>Nitro 26-CRN®</td>
<td>Yes</td>
<td>CWSN</td>
<td>Some</td>
</tr>
<tr>
<td>Dimethylene triurea</td>
<td>Triiform®</td>
<td>Yes</td>
<td>CWSN</td>
<td>Some</td>
</tr>
<tr>
<td>Short chain MUP’s (4-5, methylene urea)</td>
<td>Nutralene®</td>
<td>Limited</td>
<td>CWSN</td>
<td>Some</td>
</tr>
<tr>
<td>Long Chain MUP’s (&gt;6, ureaform)</td>
<td>Nitroform®</td>
<td>No</td>
<td>HWIN</td>
<td>Yes</td>
</tr>
</tbody>
</table>

† Cold and hot water insoluble nitrogen (CWIN, HWIN): Slower response, long residual, low burn potential, low water solubility, high cost, low surface runoff and leaching potential, and low frequency of application relative to cold water soluble nitrogen (CWSN)

### Monomethylol Urea (CoRon®)

\[
[\text{CO(NH}_2\text{)}_2\text{CH}_2\text{]}_{n}\text{CO(NH}_2\text{)}_2
\]

25 - 0 - 0

### Triazone (N-Sure®)

28 - 0 - 0

Urea + formaldehyde + ammonia = cyclic compound that is a clear liquid

### Methylene Urea (Nutralene®)

\[
[\text{CO(NH}_2\text{)}_2\text{CH}_2\text{]}_{n}\text{CO(NH}_2\text{)}_2
\]

39 - 0 - 0

### Ureaform (Nitroform®)

\[
[\text{CO(NH}_2\text{)}_2\text{CH}_2\text{]}_{n}\text{CO(NH}_2\text{)}_2
\]

38 - 0 - 0

### IBDU (Isobutylidene diurea)

\[
[\text{CO(NH}_2\text{)}_2\text{CH}_2\text{]}_{2}\text{C}_4\text{H}_8
\]

31 - 0 - 0

Release is by slow hydrolysis. Larger particle = slower release.

### Sulfur Coated Urea

\[
\text{CO(NH}_2\text{)}_2+\text{S}
\]

32 - 0 - 0

12% S. Sulfur coating attenuates nitrogen release.

### Polymer Coated Urea

Analysis varies. Polymer coating attenuates nitrogen release.

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<th>Advantages</th>
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<tr>
<td>• Long residual (months)</td>
<td>• Slow initial release</td>
</tr>
<tr>
<td>• Low burn potential</td>
<td>• Relatively expensive</td>
</tr>
<tr>
<td></td>
<td>• Require microbial activity for release</td>
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<td>• Not effective in cooler weather</td>
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