04. Classification of fertilizers – N, P and K fertilizers

**Classification of fertilizers**

Commercial N, both organic and inorganic is desired from a wide variety of materials which are found to differ very widely in their sources, properties, method of preparation and their reactions in the soil. Classification based on chemical form seems to be more satisfactory as indicated below.

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Fertilizers and manures
  Bulky organic manures
    (FYM, compost, Green manure)
  Concentrated organic manures
    Oil cakes
  Artificial fertilizers

Nitrogenous

Phosphatic

Potassic

Compound

Mixed
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Nitrogenous Fertilizers

Inorganic ammoniates

Ammonical-N
1. Ammonium sulphate
2. Ammonium chloride
3. Ammonia

Nitrate-N
1. Sodium nitrate
2. Potassium nitrate

Ammonical + Nitrate -N
1. Amm.nitrate
2. Calcium

Organic ammoniates

Amide-N/synthetic
1. Urea
2. Calcium cyanamide

Plant origin
1. Oil Cakes
2. Cabbage waste
The nitrogen content of different nitrogenous fertilizers is given below

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Name of the fertilizer</th>
<th>N content (%)</th>
<th>Form of N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sodium nitrate (NaNO₃)</td>
<td>16.0</td>
<td>Nitrate (NO₃)</td>
</tr>
<tr>
<td>2</td>
<td>Potassium nitrate (KNO₃)</td>
<td>12.5-13.5</td>
<td>Nitrate</td>
</tr>
<tr>
<td>3.</td>
<td>Ammonium sulphate (NH₄)₂SO₄</td>
<td>20.6</td>
<td>NH₄ (Ammonia)</td>
</tr>
<tr>
<td>4.</td>
<td>Ammonium chloride (NH₄Cl)</td>
<td>26.0</td>
<td>NH₄</td>
</tr>
<tr>
<td>5.</td>
<td>Ammophos - A</td>
<td>11.0</td>
<td>NH₄</td>
</tr>
<tr>
<td>6.</td>
<td>Ammophos – B</td>
<td>16.0</td>
<td>NH₄</td>
</tr>
<tr>
<td>7.</td>
<td>Ammonium Nitrate (NH₄)</td>
<td>33.0</td>
<td>NH₄ – 16.5 NO₃ – 16.5</td>
</tr>
<tr>
<td>8.</td>
<td>Ammonium sulphate nitrate</td>
<td>25.6</td>
<td>NH₄ – 19.5 NO₃ – 6.6</td>
</tr>
<tr>
<td>9.</td>
<td>Urea (CO (NH₂)₂)</td>
<td>46.0</td>
<td>Amide</td>
</tr>
<tr>
<td>10.</td>
<td>Calcium cyan amide (CaCN₂)</td>
<td>20.6</td>
<td>Amide</td>
</tr>
<tr>
<td>11.</td>
<td>Dried blood</td>
<td>3-14</td>
<td>Protein (organic)</td>
</tr>
<tr>
<td>12.</td>
<td>Groundnut cake</td>
<td>8.0</td>
<td>Protein (organic)</td>
</tr>
<tr>
<td>14.</td>
<td>Guano</td>
<td>10.0</td>
<td>Protein (organic)</td>
</tr>
</tbody>
</table>
PHOSPHATIC FERTILIZERS

Natural
Ground rock phosphate
Bone meal

Treated or processed
Super phosphate
Bone char

Industrial byproduct
Basic slag

Chemical or synthetic
Ammonium phosphate

POTASSIC

Natural
Potash mineral

Processed
MOP
SOP

Synthetic
Pot.nitrate
Pot.phosphate