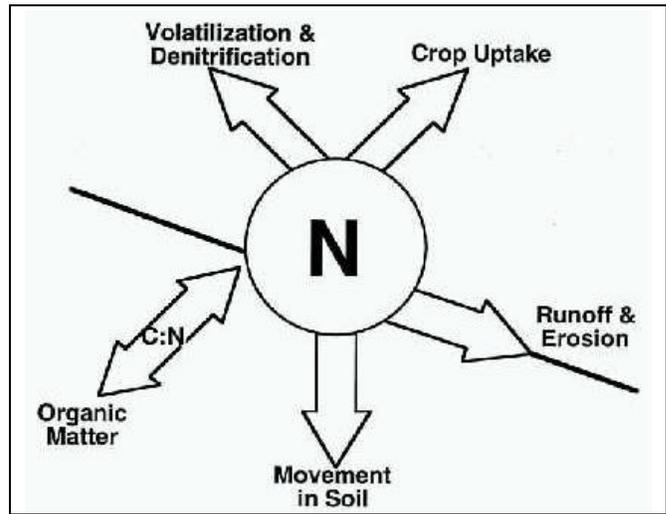


USDA NRCS
 Natural Resources Conservation Service
Conservation Across America
Nitrogen Form and Function
 Job Sheet - 590



UNDERSTANDING FERTILITY AND FERTILIZERS

NITROGEN (N)

Function:

Nitrogen is a very important plant nutrient, and one that is often found to be deficient. Plants normally contain between 1 and 5 percent N on a dry weight basis. Nitrogen is vitally important in the conversion of carbohydrates to proteins within the plant, and it is a major component of chlorophyll. An adequate supply of N in combination with other essential nutrients and good growing conditions will result in vigorous vegetative growth, and dark green color. If the amount of N available is high, and available P, K, and S are limiting, crop maturity can be delayed. Large supplies of N may result in excessively succulent tissue prone to damage by disease or mechanical injury. When N supplies are insufficient, carbohydrates will be deposited in vegetative cells causing them to thicken, resulting in the production of low quality forage or reduced crop production.

Deficiency Symptoms:

The main symptom of a need for nitrogen in most plants is light green or yellow leaf color. Normally the older bottom leaves will show the symptoms first becoming light green, then yellow at the tip. In corn the yellowing occurs at the midrib of the leaf with the edges remaining green longer. Nitrogen deficiency in grain crops may cause kernels to shrivel or have low test weight.

N Deficiency in Corn

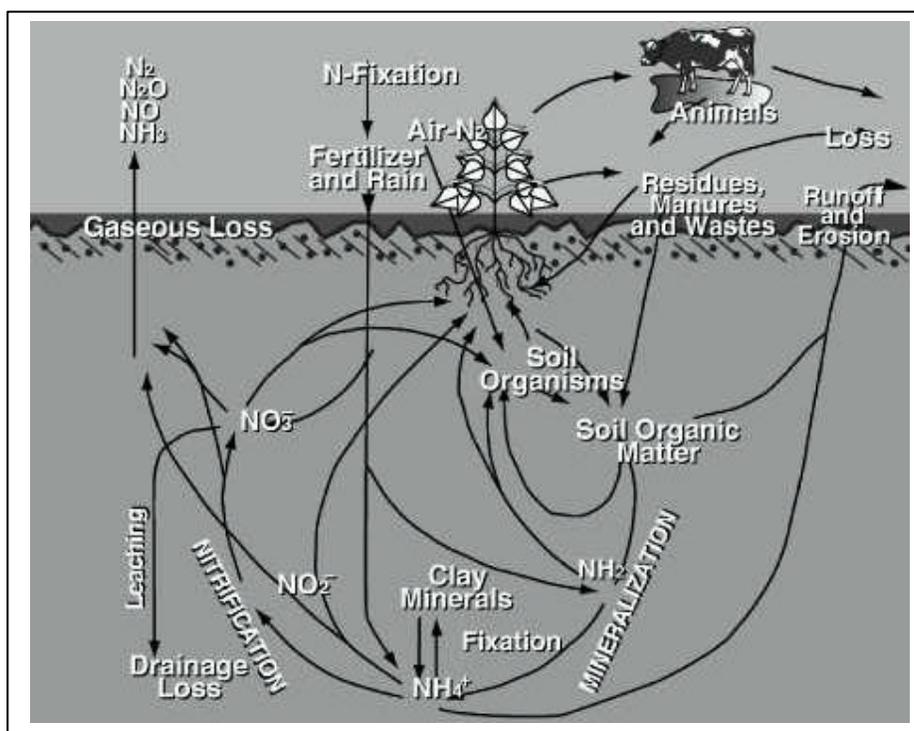


N Deficiency in Wheat



Composition of Some Chemical Sources of N

Source	Percent N	Percent P ₂ O ₅	Percent K ₂ O	Percent S
Ammonium Sulfate	21	---	---	24
Anhydrous Ammonia	82	---	---	---
Ammonium Nitrate	33 - 34	---	---	---
Ammonium Nitrate Sulfate	30	---	---	5 - 6
Diammonium Phosphate	18 - 21	46 - 53	---	0 - 2
Ammonium Thiosulfate Solution	12	---	---	26
Potassium Nitrate	13	---	44	0.2
Urea	45 - 46	---	---	---
Urea-Sulfate	30 - 40	---	---	6 - 11
Urea-Ammonium Nitrate Solution (28%)	28 - 32	---	---	---
Urea-Ammonium Phosphate	21 - 34	16 - 42	---	---
Urea-Phosphate	17	43 - 44	---	---



Nitrogen Cycle

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