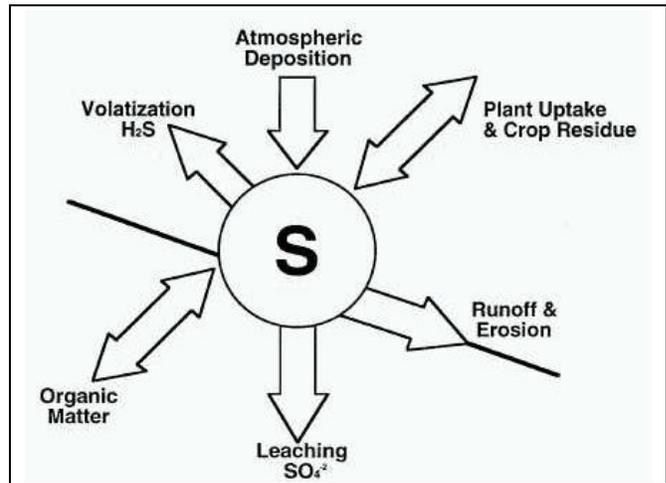


USDA NRCS
 Natural Resources Conservation Service
Conservation Across America
Sulfur Form and Function
 Job Sheet - 590



UNDERSTANDING FERTILITY AND FERTILIZERS

Sulfur (S)

Function:

Sulfur makes up 0.2 to 0.5 percent of most plants on a dry matter basis, about the same quantity as phosphorus. Sulfur is a major component of proteins. About 4 - 13 pounds per acre of S is mineralized each year from soils with reasonably high organic matter. Some sulfur is also contributed from the air. The form of S taken up by plants is negatively charged (SO_4^{2-}) and reacts in the soil much like nitrogen. Crops grown on sandy soils in high rainfall areas are most likely to exhibit S deficiencies because those soils are usually low in organic matter and S is subject to leaching. However, any soils with less than 1.5% organic matter are prime candidates for supplemental S fertility. Applying recommended rates of S, even though deficiency symptoms are not present, may enhance crop and forage quality.

Deficiency Symptoms:

Sulfur deficiencies are characterized by general chlorosis of the leaf including the veins. Because S is not readily distributed throughout the plant the deficiency will usually appear on the youngest leaves first. S deficiency in corn is exhibited through striping and pale yellow color. This can be confused with zinc stripes, though zinc deficiency will also cause white areas on the leaf. Sulfur deficiency may also result in stunting of the plant. These deficiency symptoms can be mistaken for N deficiency, but N deficiency in corn is accompanied by browned-out bottom leaves when the plant reaches the 5th - 6th leaf stage.

S Deficiency in Corn

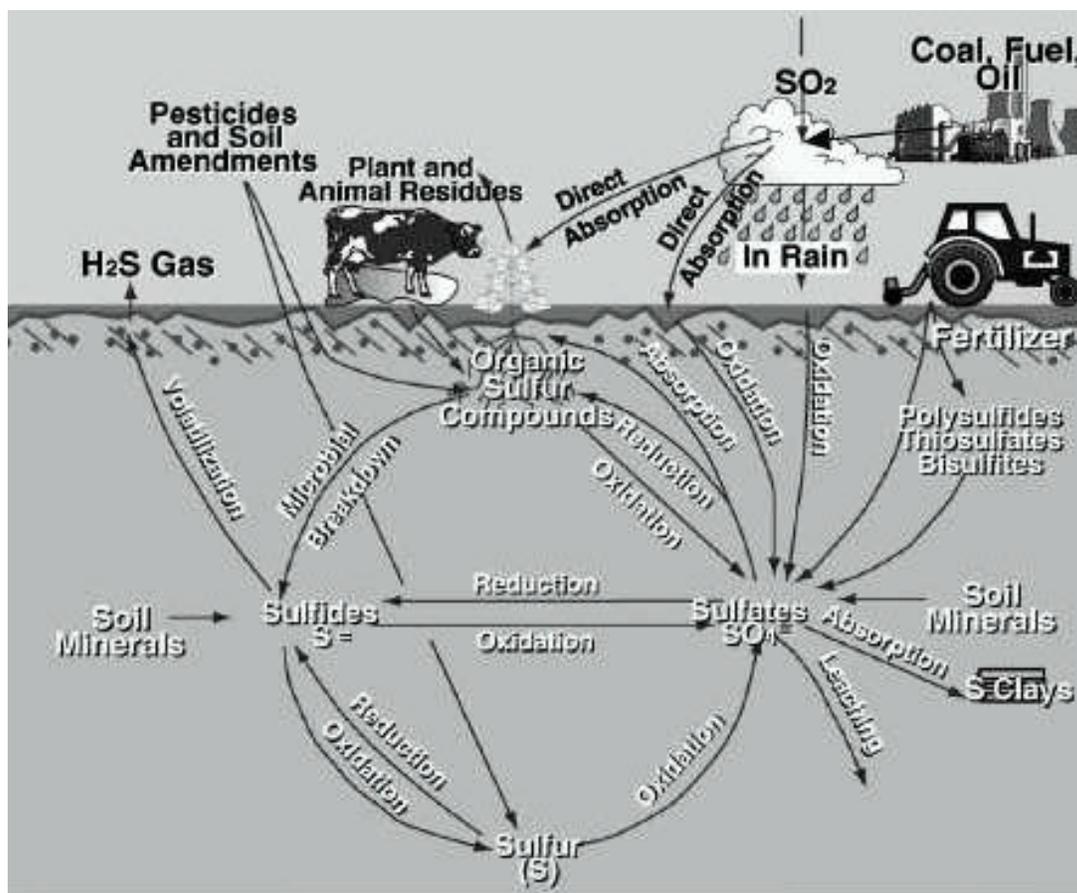


S Deficiency in Wheat



Composition of Some Chemical Sources of S

Source	Percent N	Percent P2O5	Percent K2O	Percent S
Ammonium Sulfate	21	---	---	24
Single Superphosphate	---	16 - 22	---	11 - 12
Potassium Sulfate	---	---	60 - 62	17
Potassium Magnesium Sulfate (11% Mg)	---	---	22	22



Sulfur Cycle

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