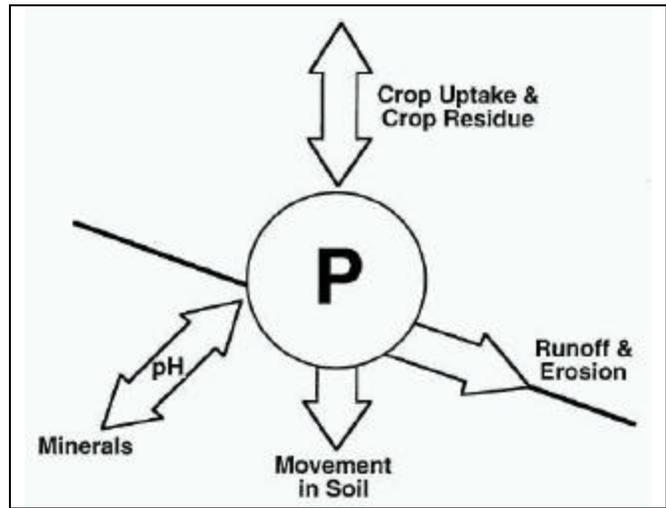


USDA NRCS
 Natural Resources Conservation Service
Conservation Across America
Phosphorus
Form and
Function
 Job Sheet - 590



UNDERSTANDING FERTILITY AND FERTILIZERS

PHOSPHORUS (P)

Function:

Phosphorus makes up 0.1 to 0.4 percent of most plants on a dry weight basis. The most essential function of P in plants is energy storage and transfer. The energy created through photosynthesis and the use of carbohydrates is stored in phosphate compounds to be used for growth and reproductive processes. Phosphorus must be available early in the development of plants to ensure good development of reproductive parts. Large amounts of P are found in seeds and fruit. Phosphorus is associated with root growth; banding of P fertilizer results in extensive root development in the treated area. Adequate supply of P aids in the timely maturation and ripening of grain crops. The quality of certain fruit, forage, vegetable, and grain crops is enhanced by proper P fertility.

Deficiency Symptoms:

Phosphorus deficient plants are stunted. A dark green color with purplish coloration in seedlings is typical of P deficiency. As plants get older they become yellow because the lack of P inhibits the use of nitrogen. Crop maturity and seed set is delayed, and in corn poor pollination can be associated with a lack of P.

P Deficiency in Corn

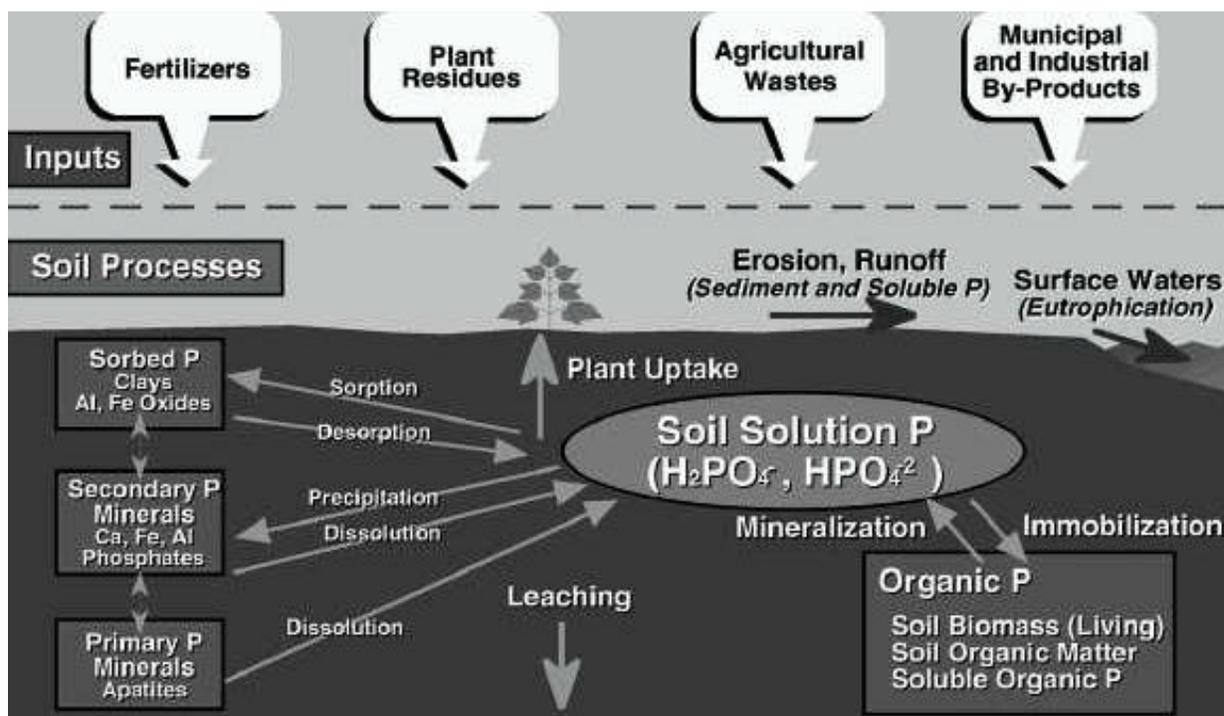


P Deficiency in Wheat



Composition of Some Chemical Sources of P

Source	Abbr.	Percent N	Percent P2O5	Percent K2O	Percent S
Single Superphosphate	SSP	---	16 - 22	---	11 - 12
Triple Superphosphate	TSP or CSP	---	44 - 53	---	1 - 1.5
Monoammonium Phosphate	MAP	11 - 13	48 - 62	---	0 - 2
Diammonium Phosphate	DAP	18 - 21	46 - 53	---	0 - 2
Ammonium Polyphosphate Solution	APP	10 - 15	35 - 62	---	---
Urea Ammonium Phosphate	UAP or UAPP	21 - 34	16 - 42	---	---
Ammoniated Normal Superphosphate	---	2. - 5	14 - 21	---	9 - 11
Ammoniated Triple Superphosphate	---	4 - 6	44 - 53	---	0 - 1
Monopotassium Phosphate	---	---	51	35	---
Dipotassium Phosphate	----	---	41	54	---
Potassium Polyphosphate	---	---	51	40	---



Phosphorus Cycle

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