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Reference cited is: Wauchope, R. D, et al. 1992. Rev. Environ. Contam. Toxicol. 13.1.

BEHAVIOR IN SOIL

Sorption: Rapidly and tightly absorbed to soil. OM, clay, silt, or sand content and soil pH have minimal effect on adsorption. Glyphosate adsorption correlates with the amount of vacant phosphate sorption sites and may occur through binding of the phosphonic acid moiety. High levels of metallic cations in clay soils increase the amount of glyphosate adsorbed. Strong adsorption to soils is evidenced in part by low phytotoxicity with soil applications. Crops can be seeded or transplanted immediately into treated areas.

K_{oc}: Average is 24,000 mL/g (estimated) (16)

K_d: 324-600 mL/g for a silty clay loam and a loamy sand

Transformation:

Photodegradation: Negligible losses

Other degradation: Degraded microbially in soil and water. Decomposition rates vary with soil and microbial population. From 10 to 70% of glyphosate may be transformed to CO_2 over a growing season or less. Non-microbial degradation rates are negligible.

Persistence: Glyphosate has moderate persistence with a typical field half-life of 47 d (16). All crops can be planted immediately after application due to strong adsorption to soil.

Lab experiments: Half-life typically is <25 d

Mobility: Low mobility on most soils in field and lab studies because of strong adsorption to soil; low potential for movement in runoff in field and lab studies

Volatilization: Negligible losses