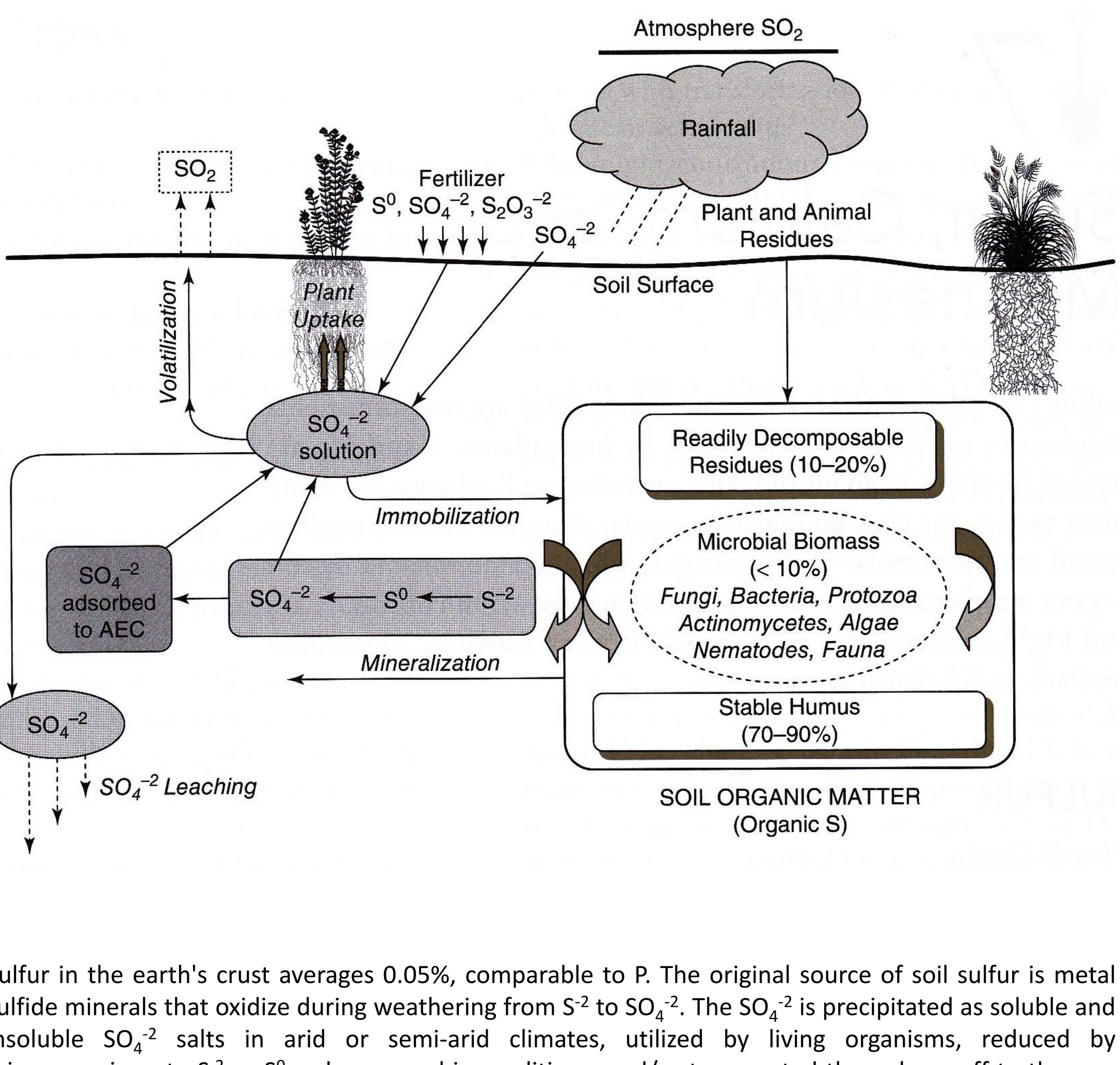
INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Sulfur cycle in soil



Sulfur in the earth's crust averages 0.05%, comparable to P. The original source of soil sulfur is metal sulfide minerals that oxidize during weathering from S^{-2} to SO_4^{-2}. The SO_4^{-2} is precipitated as soluble and insoluble SO_4^{-2} salts in arid or semi-arid climates, utilized by living organisms, reduced by microorganisms to S^{-2} or S^0 under anaerobic conditions, and/or transported through runoff to the sea. Oceans contain ca. 2,700 ppm SO_4^{-2}, whereas natural waters range from 0.5 to 50 ppm SO_4^{-2} but may reach 60,000 ppm (6%) in saline lakes and sediments.

Soil sulfur is present in organic and inorganic forms, although 90% of total S in noncalcareous surface soils exists as organic sulfur. Solution and adsorbed SO_4^{-2} represents readily plant available S. Sulfur cycling in the soil-plant-atmosphere system is similar to nitrogen in that both have gaseous components and their occurrence in soils is mainly associated with organic matter.

Havlin, J. L. et al . (2014): ***Soil Fertility and Fertilizers: An Introduction to Nutrient Management*****, 8th ed., Pearson, 516 p.**

Petr Škarpa

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