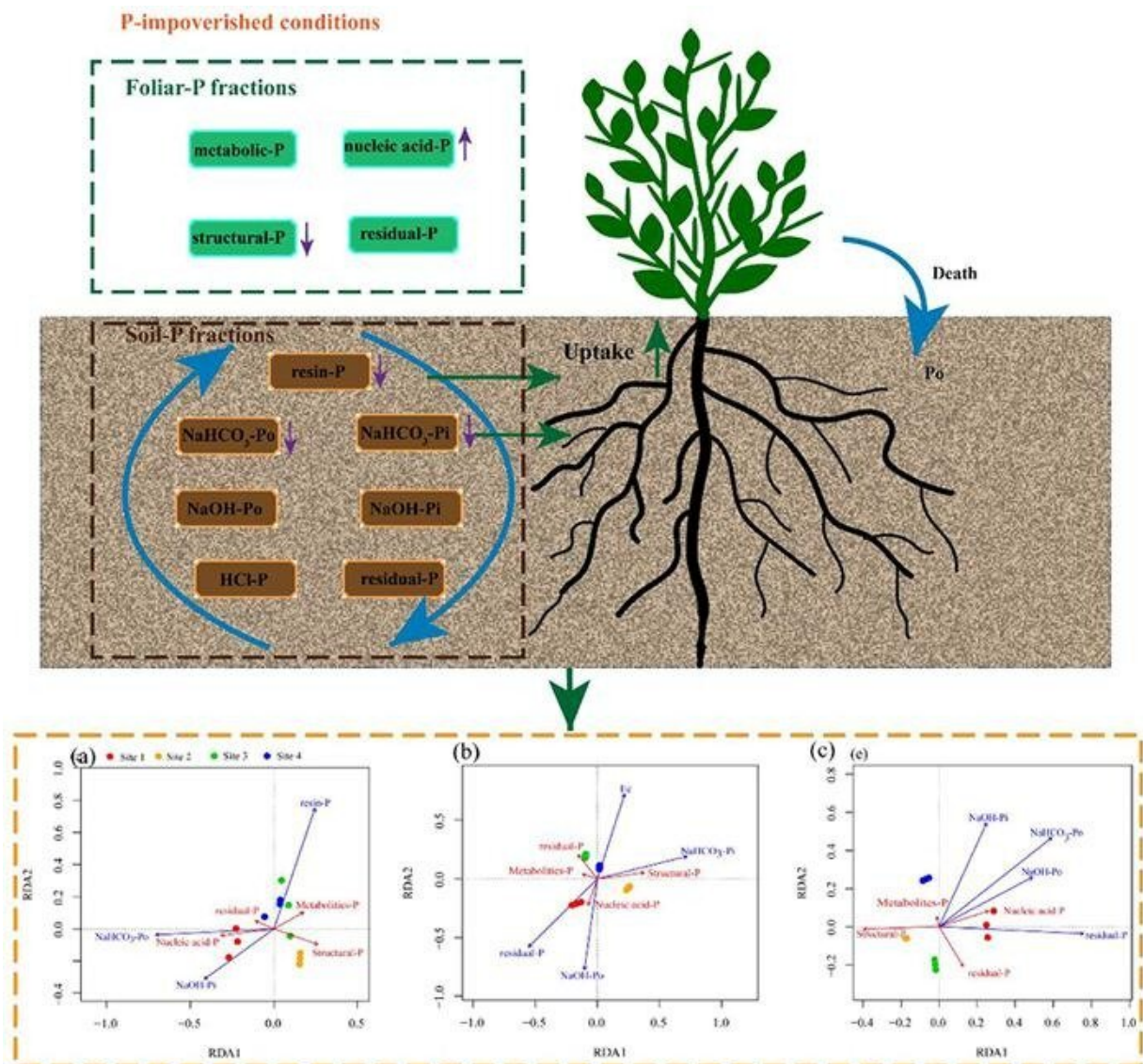


Study reveals allocation patterns of foliar-P fractions of *Alhagi sparsifolia* in different P availability soils

November 4 2021, by Li Yuan



Graphical abstract. Credit: DOI: 10.1016/j.geoderma.2021.115546

Researchers from the Xinjiang Institute of Ecology and Geography (XIEG) of the Chinese Academy of Sciences found that foliar-phosphorus (P) fractions of *Alhagi sparsifolia* changed with different P availability soils.

The findings were published in *Geoderma* on Oct. 27.

Allocation of foliar-P fractions is considered to be an efficient P-use strategy for plants to accommodate harsh P nutritional status.

Legume *Alhagi sparsifolia* (*A. sparsifolia*) is a widely distributed [natural vegetation](#) in the juncture of the Qira oasis and the Taklamakan Desert. It acquires N from groundwater or soil via the root system, but it can also obtain N through biological N₂ fixation.

Therefore, *A. sparsifolia* needs to obtain more P to maintain elemental homeostasis. However, its allocation pattern of foliar-P fractions in different P availability soils are still unclear.

In this [study](#), the researchers investigated *A. sparsifolia* growing in four different soil sites with differing availability of P in this area to explore the allocation pattern of foliar-P fractions of *A. sparsifolia* and its relationship with soil-P fractions and soil properties.

They found that *A. sparsifolia* growth was highly likely to be limited by soil-P in this area, and the concentrations of foliar total-P and young leaf metabolic-P increased with increasing soil-P availability, while foliar-N was relatively constant.

As soil-P availability decreased, *A. sparsifolia* allocated a higher proportion of foliar-P to nucleic acid-P and a lower proportion to structural-P.

Furthermore, foliar metabolic-P, nucleic acid-P, and structural-P had the strongest positive response to [soil](#) labile-P in topsoil. Soil [electrical conductivity](#), labile-P, and moderately labile-P influenced foliar-P fractions.

More information: Yanju Gao et al, Allocation of foliar-P fractions of *Alhagi sparsifolia* and its relationship with soil-P fractions and soil properties in a hyperarid desert ecosystem, *Geoderma* (2021). [DOI: 10.1016/j.geoderma.2021.115546](#)

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