Petrogypsic Horizon

Root-restrictive subsoil horizon that is cemented by gypsum

Concept and Background Information

The petrogypsic horizon is a root-restrictive subsoil horizon that is cemented by gypsum. Lateral continuity is such that spaces where roots can penetrate are more than 10 cm apart. The horizon is essentially an advanced-stage gypsic horizon where so much secondary gypsum has accumulated in the layer that the pores have become plugged and cemented. Air-dry fragments do not readily slake in water. Commonly, the gypsum was naturally occurring in the parent materials, where it was dissolved and reprecipitated locally within the horizon. Petrogypsic horizons are commonly found in arid or semiarid environments where deep leaching and removal of soluble salts like gypsum does not take place.

Generalized Characteristics

1) Horizon is cemented by gypsum to such an extent that spaces where roots can penetrate are more than 10 cm apart.
2) Thickness is $\geq$ 5 mm.
3) Gypsum content (by weight) is $\geq$ 40%.

Common Horizon Nomenclature

Commonly used horizon nomenclature includes master horizon B combined with suffixes yy and m. In addition, suffixes k and z may be used. Examples include: Byym, Byykm, and Byyzm.

Soil landscape and close-up of a petrogypsic horizon (inset) in the United Arab Emirates. (Photo courtesy of John Kelley)

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