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130-18 Morphology and Taxonomy of Gypseous Soils In San Luis Potosí State, Mexico.

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Monday, October 17, 2011: 2:55 PM

Henry Gonzalez Convention Center, Room 206A, Concourse Level

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Juan Felipe Martinez-Montoya¹, **Juan Herrero-Isern**² and **Víctor Manuel Ruiz-Vera**¹, (1)Campus San Luis Potosí, Colegio de Postgraduados, Salinas, Mexico
(2)EEAD-CSIC, Zaragoza, Spain

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The gypseous soils of Mexico have been studied only from an ecological perspective; thus, the information regarding their physical, chemical, micromorphological, and mineralogical characteristics is insufficient. There are missing data on the classification, which is of questionable quality and can be considered only as tentative. The few data regarding the taxonomy of these soils are obsolete because of the significant progress of this subject occurred on recent years. Thus, we generate new (or update the actual) information through the micromorphology, X-RD, and taxonomy of 16 gypseous soils of the San Luis Potosi State, 5 from the Altiplano and 11 from the Zona Media. Using the soil thin sections analysis, we described the micromorphological aspects of these gypsum-rich soils; this information is unique, until now, for gypseous soils in Mexico. Also, X-ray diffraction is used to investigate the characteristic mineralogy of these soils, providing new knowledge in this area in Mexico. The gypseous soil classification was updated into six subgroups according to Soil Taxonomy criteria (1999), and into eight groups at the second level following the WRB criteria (1999). The similarities between both classification systems are recognized at the greatest hierarchical levels. All pedons are Gypsisols, according to Soil Taxonomy, and Gypsisols (with some exceptions) according to WRB. Some changes in the actual taxonomy are showed; e.g., soils prior considered as Vertisols, are now classified as Aridisols (SSS, 1999) and as Kastanozems (WRB, 1999). The generated and updated information is relevant to know and to understand the behavior of the gypsum-rich soils, which should improve its management, and thus, increase its productivity.

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