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Fluvic acid carbon as a diagnostic feature for agricultural soil evaluation

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The fluvic acid fraction is considered to be sensitive to agronomic and environment factors. Therefore, the objectives of this study were to evaluate total carbon (TC) and fluvic acid carbon (FC) contents and to establish a possible relationship between the FC fraction and coarse organic matter in agricultural soils (CTVs), (ii) conservation tilled soils (CSTs), and (iii) virgin soils (VIRs) from a wide region in Argentina. The investigation included 114 surface samples of Hapludolls, Haplustolls, and Entisols ranging in texture from sand to silt loam. In 29 selected samples, two separate soil mineral fractions were used (<0.05 mm and 0.1-2 mm) to determine FC and TC contents. No statistically significant differences were found in TC contents in the fine fraction < 0.05 mm between VIRs, CSTs, and CTVs; however, FC contents were higher in VIRs than in CSTs and CTVs at the 0.05 probability level. In addition, statistically significant differences ($P < 0.05$) observed in FC contents among all three treatments in the coarse fraction 0.1-2 mm confirm that the FC fraction is more influenced by the farming-system than is TC. Moreover, FC / TC ratios tended to increase under agricultural land use (CTVs > CSTs > VIRs), and this ratio also increased from finer textured soils to coarser text was highly related to recently incorporated organic residues.

Management discriminant properties in semiarid soils

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