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Fluvic acid carbon as a dignostic feature for agricultural soil evaluation

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The fluvic acid fraction in considered to be sensitive to agronomic and enviroment factors. Therefore, the objectives of this study were to evaluate total carbon (TC) and fluvic acid carbon (FC) contens and to establish a possible relationship betwen the FC fraction and coarse organic matter in agricultural soils (CTVs), (ii) conservation tilled soils (CSTs), and (iii) virgins soils (VIRs) from a wide region in Argantina. The investigation inclued 114 surface samples of Hapludolls, Haplustolls, and Entisols ranging in texture from sand to silt loam. In 29 selected samples, two separate soil mineral fraction were used (<0.05 mm and 0.1-2 mm) to determinate FC and TC contents. No statistically significant diferances were foun in TC contents in the fine fraction < 0.05 mm betwens VIRs, CSTs, and CVTs; however, FC contents were higher in VIRs than in CSTs and CVTs at the 0.05 probability level. In addition,, statistically significant differences (P< 0.05) obsrved 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 thn is TC. Moreover, FC / TC ratios tended to increase under agricultural land use (CVTs > CSTs > VIRs), and this radio also increased from finer textured soils to coarser tent was highly related to recently incorporated organic residues.

Management discriminant properties in semiarid soils

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The physical properties of coarse – textured soils in semiarid regions often deteriorate with use. We hypotetised that the changes in the physical properties of the soil were related to the cropping sistememployed. Surface sampled of 52 Entic Haplustolls under three diferents uses (24 under continuous cultivation), 18 under rotation wuth grass leys (R), and 10 virgin soils (V) were analyzed for clay, silt, organic matter anrd water content , bulk density, compaction and aggregate stability. Data were analyzed statistically using principal components, canonical variables, and discriminant functions. A satisfactory segregation of the soils according to discriminant propierties (coarse organic matter, aggrgate stability, and suceptibility to compaction) was obtained. The model developed satisfactory classified the soils under different uses (100% R, 83 % C, and 88% V).

Principal component analysis also sowed that bulck density, compaction, and wet aggegate stability are related to organic matter content. We conclude that, in the studied region, the lower the ratio of organic matter to clay + soil content, the more severe the physical deterioration of the soils.

Key wods: Soil physical properties, discriminant analysis, semiarid soils, soil management.

Variaciones de los espectros polínicos de miel y carga corbicular en un colmenar de Santa Rosa- La Pampa

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In order to study the behavior between the hives in one apiary, the pollen spectra of pollen basket and honey samples were analysed. The samples were taken at the same time from five similar hives during 2 months. A total of 30 pollen types were identified, 5 of them were found exclusively in pollen basket samples, 11 taxa in honey samples and 14 pollen types were common in both. At both activities the colonies showed high selectivity and the bees preferred a few species called primary source (percentage higher than 10). The taxonomic richness, higher in honey than in pollen basket, was due to pollution from different airborne pollen grains. The high values of correlation between pollen spectra of corbiculaes and honeys, removed at the same time from different hives, suggest a similar behavior in the exploitation of vegetable resource. This uniformity shows that a few colonies may be used to provide a good representation of both activities in the whole apiary.