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Aplication of a chemical vulnerability index to red soils in La Mancha (Central Spain).

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Red soils are widely distributed in Mediterranean regions. They constitute one of the most important soil resources for crop production and other uses. The main objective of this paper is to estimate the inherent chemical susceptibility of red soils of La Mancha to chemical degradation. Selected 47 soil profiles, were analyzed in the area by means of multivariate analysis; we identified five soil attributes that are well represented in the local soils database, which are most likely to control the chemical vulnerability. These attributes are the calcium carbonate, organic matter and clays togheter with soil depth and drainage. The attributes were transformed and a simple vulnerability index (VI) was deviced. We concluded that the index may be used as a first approximation rating of La Mancha's red soils' vulnerability against an eventual chemical degradation, or to aid resource management and prevent anthropogenic potential impacts.

Keywords: red soils, degradation, resilience, vulnerability index, soil quality.