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Surface application of mixtures of cattle manure vermicompost (VEB) with dolomitic lime (CD) and phosphogypsum (FY) to improve Ultisols. Study in simulated soils columns.

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Toxicity of Al is considered the main factor that restricts the growth of plants in acid soils. Liming is a feasible technique to neutralize the acidity of the surface soil, with slow or no effect on subsoils. Gypsum has no the same neutralizing effect, but has higher solubility and mobility being used to improve acid subsoils. Organic residues such as vermicompost also reduce soluble Al and increases pH of acidic soils and subsoils. This work has as objective to study the effect of surface application of mixtures of cattle manure vermicompost (VEB), with dolomitic lime (CD), and phosphogypsum (FY) on chemical properties of two simulated in columns Ultisol, belonging to the moisture regimes Udic and Ustic, amendment material was apply superficially to the column individually and mixed in different proportions. The treatments containing VEB induced changes in soil and subsoil. Individual application of VEB in the Ustic area promoted increments in the exchangeable K. The rest of the observed effects occurred in soil and subsoil of the Udic area such as reductions in levels of exchangeable Al3+ and increased of the ECEC, Ca2+, Mg2+, and exchangeable K+.