



Synergy in Science: Partnering for Solutions

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250-5 Rationale for a Brazilian Soil Classification System - SiBCS.

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The rationale for developing a Brazilian Soil Classification System (SiBCS) was to differentiate large expanses of soils, classified in Soil Taxonomy (ST) as Oxisols, Ultisols, and Plinthic classes. The ST was considered inadequate to represent soils in Brazil's large territory, with a complexity of tropical, dry and subtropical environments, and soil forming processes. In ST higher categories', order to great group, highly weathered soils in old landscapes of Cerrado and soils on newest surfaces such as Amazon Basin and Pantanal, were likewise classified as Udox/Perox or Udults. Important great groups such as Plinthudults are not divided in ST at subgroup level, and the Plinthuquox only has two classes (Aeric and Typic). Climate parameters are not relevant to highly weathered soils in very old landscapes, where time has altered contribution of parent materials. The moisture or temperature regime as criteria for higher categories' in ST does not contribute to distinguish Brazilian soils. Comparing ST and WRB Reference Soil Groups (RSGs) (FAO - IUSS), the RSGs - Gleysols, Plinthosols and Nitrisols, and various groups for weathered soils, are a positive aspect of WRB; although the first edition (1998) did not considered demands to create map legends, limiting application in soil surveys. SiBCS first edition was released in 1999, modified in 2006 and 2013, as a result of application in surveys and researches. SiBCS is a hierarchic system, based on morphogenetic attributes, has 13 soil orders structured as a key down to subgroup level, with 44 suborders, 198 great groups, and 861 subgroups (<http://www.cnps.embrapa.br/sibcs/>). The dominant classes in Brazil are, in decreasing area – Latosols (31.61%), Argisols (26.94%), Neossols (13.24%), Plinthosols (6.95%), Gleysols (4.69%), Cambisols (3.67%). The Nitrisols although occupying smaller area (1.14%) represent an important resource for agriculture. The SiBCS is an important innovation to interpret agricultural potential and limitations of Brazilian soils.

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