Specific Surface Area of Soil Materials After Different Dissolution Procedures. (S02-costa114754-Poster)

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Abstract:

Twenty nine samples of the clay size fraction of soils formed from different rock materials found, south of Brazil, were submitted to the evaluation of their total (SSAt-EGME method) and external specific surface area (SSAe-BET-N2 method). Their internal specific surface area was calculated by the difference between SSAt and SSAe. The SSA values were correlated with the cation exchange capacity (CEC), before and after the removal of the iron oxides with dithionite-citrate-bicarbonate (Fe-DCB). Before the removal of the iron oxides, positive correlation was observed between the CEC and the SSAt (r=0,66), the SSAi (r=0,80), but the same was not observed for the SSAe (r=0,14). The largest value of the correlation coefficient was observed between the SSAi and the CEC, which reflects the dependence of CEC to the 2:1 clay minerals. This results confirm that the SSAi represents most of the SSAt. With the Fe-DCB-treated samples it was observed the same tendency, with values for the correlation coefficient of r=0,92; 0,96

and 0,62 between the CEC and SSAt, SSAi and SSAe, respectively. This is due to the significant contribution of the iron oxides to the SSAt and SSAe, but not in the same proportion to the CEC of these soils.

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