B-16 : INVESTIGATION ON NATURALLY OCCURRING ORGANO-MINERAL COMPLEXES OF FOUR ULTISOLS OF SRI LANKA

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Minerals are constantly in association with natural organics and microbes in soil environments. Major products of the interactions of soil minerals with organic components and organisms are organo-mineral complexes. Organic matter is difficult to extract from these complexes. This study was undertaken to investigate organic C amounts extracted from different treatments.

Samples of ultisols from four locations in Sri Lanka were collected at two depths viz: 0 - 15 cm and 15-30 cm. An alfisol from the same depth was used for comparison. The clay fractions of these samples were separated without any pre-treatment. Organic substances were extracted from each clay fraction by successive treatment of 0.1M NaOH, and after repeatedly shaking the sample with HF/HCl solution, again by 0.1M NaOH which indicates C and N in organo-mineral complexes. Organic C and N were determined in these extracts and in the clay residue.

Results showed that the conventional method used for determination of organic C expressed only 50%-80% of the total amounts. Experimental data indicated that considerable amounts of organic C and N were soluble after the HF/HCl treatment. However, upto 10%-30% of the total C still remained in the residue. The amounts of humic substances which were resistant to extraction differ with organic C content of soils.