B-14 : BEHAVIOUR OF pH - BUFFERING IN SOME SOILS

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Resistance of a soil to pH changes should be known in altering the soil reaction by addition of appropriate materials.

This study was to evaluate the buffering behaviour of soils from 21 locations in Sri Lanka. 10 g of each soil was treated with 10 ml of N/30 $Ca(OH)_2$ followed by an addition of another 10 ml of the same.

The buffer curves obtained were different to each other; ie. for the same change of pH, each soil required different amounts of $Ca(OH)_2$. The changes by the first addition was considerably higher in all soils than by the second. This indicated that the first treatment itself has made a contribution to improve buffering. Soils grouped in pH ranges 4.0 - 5.0, 5.0 - 6.0, 6.0 - 7.0 and 7.0 - 8.0 required 9.0, 9.1, 12.0 and 14.6 mg expressed as $CaCO_3$ respectively, for a unit pH change by first addition. Respective amounts utilized at the second addition were 13.2, 14.1, 18.2 and 26.1 mg respectively. Besides, the study showed that the soils resemble higher buffer abilities at higher pH levels.

Hence, it is important to look at buffering ability before recommending liming (or acidulating materials).