component of CEC. This component of acidity which reacted with the base in two stages was attributed to the neutralisation of excess protons attached to the positive ($XAl-OH_2^{+0.5}$) and negative ($XSi-O^{-0.5}-AlX$) centres produced on the lateral surfaces of the clay crystals due to lattice termination. These results, therefore, not only reveal the general existence of the pH-dependent component of CEC in the layer silicates, but also show that this component of acidity is not due to the oft reported basic-Al ions occupying the exchange sites of layer silicates.

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The pH dependent cation exchange capacity ratio as criterion for the classification of new hebrides (Venuatu) Andosols

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The high Δ CEC value, difference between cation exchange capacity at pH 10, 5 and pH 3, 5, is an Andosol characteristic. However, previous studies showed that this value depends on the chemical composition of allophanic clays. This fact is confirmed by measurements on different New Hebrides Andosols. Instead of absolute CEC vlaue, we propose to compare the different Andosol groups on the basis of the Δ CEC value:

$$\frac{\text{CEC (pH 9)}-\text{CEC (pH 4)}}{\text{CEC (pH 9)}} \times 100$$

Results bring out that variations of this ratio allow to distinguish the diverse groups of Andosols that we studied. Moreover, there is a narrow relationship between the CEC ratio and the chemical composition of allophanic products (SiO_2/Al_2O_3 molar ratio of the less than 2μ and "amorphous" fractions) and also Andosols genesis conditions (formation time and rainfall). Therefore the Δ CEC ratio is proposed as a criterion for Andosols classification.

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