COMPARISON OF TITRIMETRIC AND ATOMIC ABSORPTION SPECTROMETRIC METHODS FOR THE ESTIMATION OF SOLUBLE CALCIUM AND MAGNESIUM IN SOILS

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ABSTRACT

A study was undertaken to compare titrimetry with atomic absorption spectrometry for the estimation of soluble calcium and magnesium in soils. The objective was to evaluate titrimetric method which may be considered for the estimation of these elements when atomic absorption spectrometer is not available. Comparison of the methods was made using 18 soils having a range of properties and calcium and magnesium concentrations. Saturation extract taken from each soil was divided into two portions. One portion was analyzed for calcium and magnesium by atomic absorption spectrometer while other was utilized for titrimetric method using EDTA as complexing agent in the presence of eriochrome black-T and calcon indicators. The results of the study revealed that titrimetry is quite a reliable technique as the values obtained for calcium by both the methods were almost similar ($r^2=0.996^{**}$). Similarly results of magnesium were also identical ($r^2 = 0.994^{**}$).