

# STUDY ON THE COLORIMETRIC DETERMINATION OF ALUMINIUM BY ALUMINON METHOD

COLORIMETRIC estimation of aluminium in plant and soil is carried out by employing the aluminon method. The quantity of aluminium present in the samples is calculated from a previously drawn standard curve. In the present study, aluminium was estimated from  $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$  by the method of Chapman and Pratt (1961) using the Bausch and Lomb 'Spectronic-20' Spectro-photometer. These authors have suggested a range from 0 to 120  $\mu\text{g}$  of Al in 50 ml as standard for the preparation of the standard curve. While doing so at 537.5  $\text{m}\mu$ , which is considered as the sensitive wavelength for measuring small quantities of Al, a linear relationship could not be obtained between absorbance and the concentration of aluminium beyond 40  $\mu\text{g}$  in 50 ml. To test this discrepancy, standard curves were drawn at 520  $\text{m}\mu$  (Jackson, 1961), 530  $\text{m}\mu$  (Black, 1965) and 465  $\text{m}\mu$  (Chapman and Pratt, 1961) for the concentrations of Al ranging from 0 to 120  $\mu\text{g}/50\text{ml}$ . The earlier observation was confirmed in the case of curves drawn at 520  $\text{m}\mu$  and 530  $\text{m}\mu$  but not at 465  $\text{m}\mu$  where there was a linearity up to 60  $\mu\text{g}$  in 50 ml (Fig. 1). Hence, it is suggested that the aluminium content of the samples should be kept within a limit of 40  $\mu\text{g}$  in 50 ml if the absorbance is to be measured at 520, 530 or 537.5  $\text{m}\mu$  wave lengths. Though the standard curve at 465  $\text{m}\mu$  does not start from the zero of the axis, it is linear up to 60  $\text{m}\mu$  in 50 ml. Therefore, 465  $\text{m}\mu$  wavelength may also be used for this purpose.

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*Regional Station,  
Central Plantation Crop Research  
Institute, Vittal-574 243,  
South Kanara, Karnataka.*

A. R. MOHAPATRA  
N. T. BHAT