SORBIC ACID IN RECONSTITUTED LEAF

(Automated Colorimetric Method)

I. INTRODUCTION AND SUMMARY

Sorbic acid is determined colorimetrically on the AutoAnalyzer. A ground sample of reconstituted tobacco is extracted with an aqueous acetic acid solution. The filtered extract is submitted to the AutoAnalyzer II where color development and absorbance measurement are done automatically. The sorbic acid is oxidized with potassium dichromate-sulfuric acid to malonaldehyde which reacts with 2-thiobarbituric acid to form a red colored product which absorbs at 530 nm. Interfering background absorbance is eliminated by on-line dialysis.

Nitrates, alkaloids, total reducing sugars, urea, phosphorus and ammonia may be determined on a portion of the same extract (Method Numbers A-16, E-1D, E-49, E-57 and E-56, respectively).

The average recovery of sorbic acid added to RCB monitor was 98.9%. The relative standard deviation at the two-sigma level was ±4% for experimental samples and ±4% for RCB monitor samples.

II. SAMPLE REQUIREMENTS

Total sample recommended: 2 grams

Sample recommended per determination: 0.5 gram

Replicate determinations normally made: 2 grams

Man-hours per determination: 0.4 hour

Man-hours for replicates: 0.5 hour/2 determinations

Total elapsed time: 0.5 hour/2 determinations