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I S O T A CH O P H O R E S I S

APPLICATION NOTE No. 11

DETERMINATION of SORBIC ACID in FOOD

MAIN FEATURES:

Sorbic acid as a preservative can be determined quantitatively by isotachophoretic separation in drinks, wines, jams, etc. Little or no sample pre-treatment, and high reproducibility of the results are typical features of this determination. Simultaneously it is possible to analyse other anions: benzoic, formic, lactic, PO_4, citric, etc.

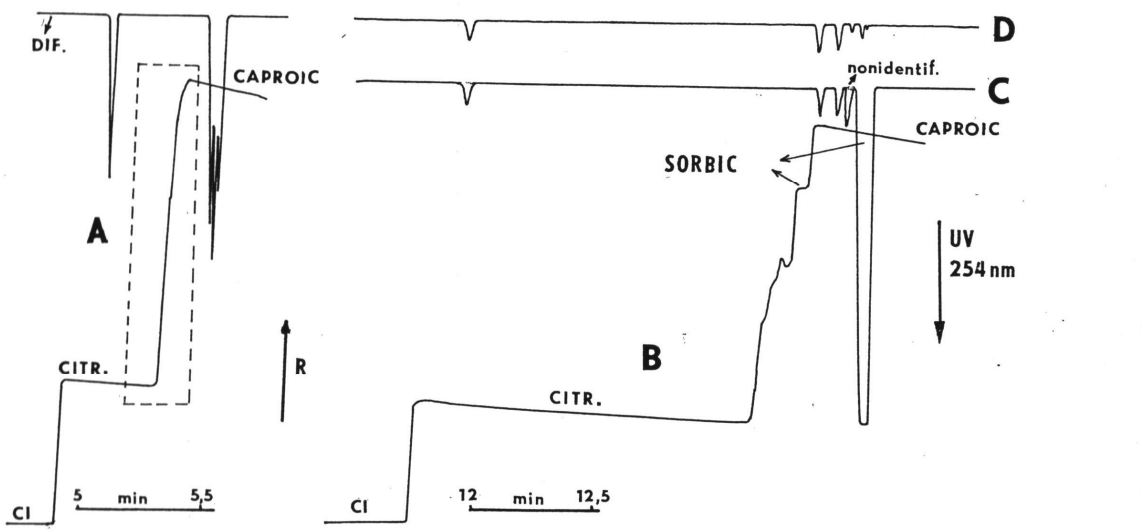

Fig. 1 : Isotachophoreogram of syrup concentrate for preparation of lemonade BELLA (fy White Lady)
A – Isotachophoreogram from conductivity detector of preseparation column. Citric acid was quantitatively determined. Only the zones in the box were analysed in analytical column.
B – Isotachophoreogram from conductivity detector of analytical column
C – Isotachophoreogram from UV-detector. 500 mg/kg is determined concentration of sorbic acid
D – Isotachophoreogram from UV-detector, syrup was free of sorbic acid.

Conditions : leading electrolyte (LE):
10^{-2} M Cl + 5.10^{-2} β-alanine + 0,1HEC (hydroxyethylcellulose), pH=3,9

terminating electrolyte (TE):
5.10^{-3} M caproid acid

I_1 = 250 μA, I_2 = 50 μA, V=30 μl, sample dilution 1 :200

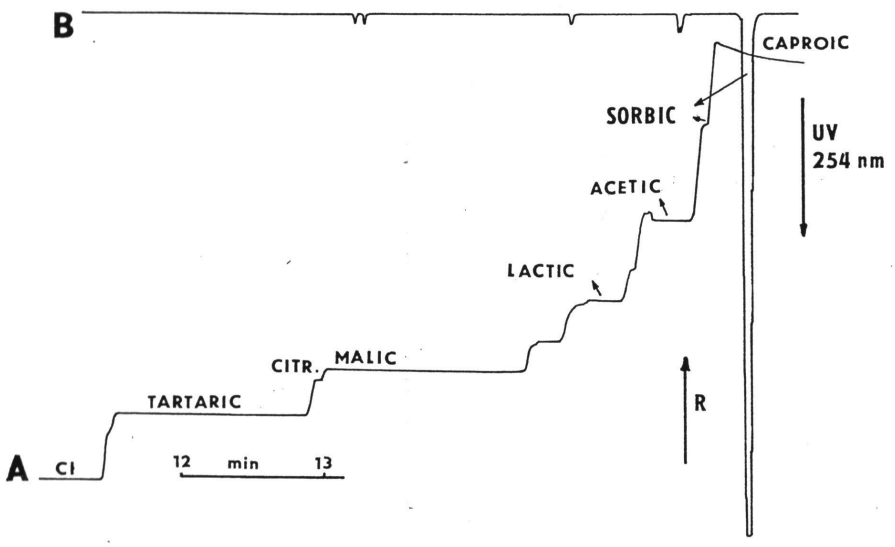

Fig. 2 : Isotachophoreogram of wine with adding 100 mg/l of sorbic acid
A – record from conductivity detector
B – record from UV-detector (254 nm)

Conditions : as in Fig.1., only leading electrolyte in analytical column was with half concentration for increasing sensibility.

Leading electrolyte :
5.10^{-3} M Cl + $2{,}5.10^{-2}$ M β-alanine + 0,1% HEC+ pH=3,9
I_2 = 30 μA; sample dilution 1 : 25