

LETTER TO THE EDITOR

The Effect of Storage on the Respiration of Washed Suspensions of *Bact. coli*.

SIR,—The letter of Cook and Steel¹ on the constancy of the viable count of a strain of *Bacterium coli* when kept at ambient room temperatures has prompted me to report the effect of storage on the oxygen uptake and viability of washed suspensions of *Bact. coli* N.C.T.C. 5934 when suspended in quarter strength Ringer solution and held at 4° C.

QO₂ values for washed suspensions obtained with 12 substrates are presented in Table I. The QO₂ value is defined as the oxygen uptake in $\mu\text{l.}/\text{mg.}$ dry weight bacteria/hour. Oxygen uptakes were determined in the Warburg respirometer at 37° C. For comparative purposes the figures in the table are expressed as a percentage of the QO₂ value at 0 days.

TABLE I

Substrate	Age of suspension in days									
	0	1	2	3	4	5	6	10	15	18
Glucose	100	—	98	—	92	—	94	90	85	—
Fructose	100	—	94	—	—	92	—	—	—	—
Mannitol	100	102	100	—	—	—	97	—	—	79
Glycerol	100	—	99	100	—	98	—	—	—	82
Lactate	100	109	—	99	—	—	96	88	—	81
Succinate	100	96	—	101	—	—	88	86	—	79
Acetate	100	—	—	97	—	—	—	—	—	—
Pyruvate	100	—	—	—	98	—	—	—	98	—
Formate	100	—	95	—	—	—	—	—	—	—
Sucrose	100	—	96	—	—	—	—	70	—	—
Raffinose	100	—	—	83	—	—	—	—	—	—
Lactose	100	98	84	—	—	—	77	—	—	—

Viable counts under these storage conditions are given in Table II, where the figures are duplicate counts obtained by serial dilution in quarter strength Ringer and when multiplied by 10⁷ give the viable organisms/ml. in the suspension.

TABLE II

Suspension number	Age of suspension in days											
	0		3		4		5		8		12	
1	299	310	289	320	—	—	275	264	272	281	224	227
8	329	308	—	—	317	321	—	—	287	292	—	—
24	282	263	—	—	—	—	271	262	274	256	—	—

W. B. HUGO.

Department of Pharmacy,
The University, Nottingham.
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REFERENCE

1. Cook and Steel, *J. Pharm. and Pharmacol.*, 1955, 7, 224.