

A MORE RAPID PRESUMPTIVE TEST FOR COLIFORM BACTERIA IN WATER

The findings of Mallimann and Darby¹ were utilized in devising a rapid test for coliform bacteria in water by Sandholzer and Quimby.² For this test a medium of the following composition is recommended:

Tryptose	..	20%
Di-potassium hydrogen phosphate	..	4.0%
Potassium dihydrogen phosphate	..	2.0%
Duponol*	..	0.1%
Potassium nitrate (nitrite free)	..	1.0%

* Obtainable from Ashe Laboratories, London.

As tryptose was not available in India (or even U. K.) a modification of the above medium was necessitated; it was observed that Stearns peptone could effectively replace tryptose and that it is better not to mix sulphonilic acid with alpha naphthylamine after their preparation in the dark bottle as was recommended by the above workers. Results obtained by this method on two hundred samples of raw, settled, filtered and chlorinated water were compared with those recorded by Macconkey's Bile Salt Neutral Red Lactose broth method of water analysis.³ The results reveal (see table below) that there is no significant difference between them and those by the above authors. It is therefore obvious that peptone can be conveniently used in place of the more expensive tryptose.

TABLE I

The comparison of nitrate reduction test for coliform bacteria with the standard method and with the results obtained by Sandholzer and Quimby.

No. of samples tested*	Nitrite positive confirmed*	Reaction in Duponol-Peptone Medium Tested after :							No. of samples tested†	Nitrite positive confirmed†
		6 hrs.	8 hrs.	10 hrs.	12 hrs.	14 hrs.	24 hrs.	48 hrs.		
4	4	+	+	+	+	+	+	+	0	0
54	54	-	+	+	+	+	+	+	26	26
27	27	-	-	+	+	+	+	+	13	13
20	20	-	-	-	+	+	+	+	18	12
1	1	-	-	-	-	+	+	+	8	3
26	4	-	-	-	-	+	+	+	7	2
11	1	-	-	-	-	-	-	+	8	1
57	0	-	-	-	-	-	-	-	20	0

* Tested by the present author on MacConkey's Bile Salt Neutral Red Lactose broth as per standard method, and on Duponol Peptone as a test medium.

† Tested by Sandholzer and Quimby on Brilliant Green Lactose Bile-salt broth method as standard method and on Duponol-Tryptose as test medium.

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1. Mallimann, W. L., and Darby, C. W., *Am. J. Pub. Health*, 1941, **31**, 127.
2. Sandholzer, L. A., and Quimby, F. H., *Jour. of Bact.* 1945, **50**, 105.
3. Ministry of Health No. 71 (1936).

A STUDY IN CONTRAST OF THE EFFECTS OF COCOANUT WATER ON THE GROWTH OF IMMATURE EMBRYOS OF CORN (MAIZE) WHEN APPLIED BEFORE AND AFTER GERMINATION OF THE EMBRYO

IN an exploratory experiment to find out the effect of natural extracts on the growth of a two-week-old corn embryo, it was observed that these extracts exercised some depressing effect upon the germinating embryo; in other words, it took a longer time for the embryo to germinate in the culture medium when in contact with the extract than when it was absent. The natural extracts tried were cocoanut meal extract and young corn ovule extract. A similar depressing effect was observed in the case of cocoanut water (Uttaman,¹ 1949). To examine this phenomenon more critically and, incidentally, to seek an explanation thereof, the following experiment was set up.

Two-week-old corn embryos were used. The treatments consisted of:

1. Cocoanut water applied at the time of placing the embryo in the medium.
2. Cocoanut water applied the next day when the embryo had just started germinating.
3. Control.

Tukey's medium plus active growth promoting ingredients used in culturing very young embryos of corn in a previous experiment (Uttaman,² 1949) was used for culturing these embryos. Each treatment was replicated three times and growth measurements for shoot and root were made for the same embryo continuously for five days. The results are entered in the table below. The method of application and the quantity applied, of cocoanut water