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## The Estimation of the Hitherto Applied Method of E. Coli Detection in Meat Curing Brines.

The bacteriological investigation of meat curing brines is carried out in Poland in accordance with the branch standard RN -MPM and MI/Mies.- 278/56 "Meat curing brines" -methods of bacteriological investigation and assessment of results".

The E.coli titre determination is carried out according to the standard, on the Kessler - Swenarton's medium.

The application of the above method leads often to erroneous results.

Thus, e.g. the E.coli rods are detected in 1 ml or 0,1 ml, their absence sometimes being stated at the same time in 5 ml of the brine given. In such cases non - correlated results are obtained, what leads to an erroneous titre estimation. The cause of the error is, probably, an improper relation of the brine to the medium. (1 : 5).

In this connection the investigation has been started, aiming at assessment and choice of a possible objective method for determining E.coli titer in meat brines.

### Material and methods.

The following media and incubation conditions were assumed:

- A. The medium of Kessler - Swenarton, incubation temperature 37°C, aerobic conditions;
- B. The medium and the incubation temperature as above, anaerobic conditions;
- C. The medium as above, incubation temperature 44°C, aerobic conditions;
- D. The medium and the incubation temperature as above, anaerobic conditions;
- E. Brilliant Green Lactose Bile Broth, incubation temperature 37°C, aerobic conditions;
- F. The medium and the incubation temperature as above, anaerobic conditions;
- G. The medium as above, incubation temperature 44°C, aerobic conditions;
- H. The medium and the incubation temperature as above, anaerobic conditions.

In all the variants investigated (A - H) the meat brine was inoculated into a medium in the following relations:

5 ml of brine - 50 ml of medium;

5 ml of brine - 25 ml of medium.

Furthermore, by 1 ml of undiluted brine and by 1 ml of the brine dilutions 1 : 10, 1 : 100, 1 : 1000 per 10 ml of a medium were inoculated for exact E.coli determination in the case of very high brine contamination.

In such a way 55 meat brine samples in each of the investigation variant were examined. After incubation of the above media the transfers on the McConkey's medium were carried out for further E.coli identification.

### Results.

For particular variants the amount of positive results has been as follows:

Investigation variant	Inoculation of 5 ml of meat brine per 50 ml of medium	Inoculation of 5 ml of meat brine per 25 ml of medium
A	54	49
B	54	50
C	52	36
D	36	26
E	53	42
F	55	52
G	50	50
H	28	27
<b>T o t a l</b>	<b>382 positive results</b>	<b>339 positive results</b>

### Discussion of the results.

It is evident from the above data that the positive results were obtained more often at the relation of meat brine to medium of 5 : 50 than at that of 5 : 25. It seems, therefore, that an appropriate correction of the standard mentioned above would enable avoiding non - correlated results and their erroneous interpretation at E.coli titre determination in meat curing brines.

At comparison of the results obtained on two media mentioned no significant differences have been observed.

Somewhat better results have been obtained at the medium incubation at the temperature 37°C than at 44°C. Distinctly less amount of the positive results has been obtained in anaerobic conditions, at the incubation temperature 44°C

and it seems, therefore, that these incubation conditions would not be suitable for the E.coli titre determination in meat curing brines.