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THE NEED FOR MICROSCOPY OF "TYPICAL" COLONIES OF ESCHERICHIA COLI ON ENDO AGAR

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Identification of coliform bacteria is carried out in almost all food products and feeds. This method is standardized in a number of regulatory documents [1,2,3]. It is one of the most widely used in laboratory practice and well known to sanitary microbiologists. It is based on the inoculation of the product in enrichment broth, followed by preliminary identification on Endo agar. Typical coliform bacteria grow on it in the form of red colonies with metallic lustre. Such characteristic external signs, together with the controlled selectivity of the medium itself [4], sometimes encourage bacteriologists to conclude that coliform bacteria were detected without the necessary Gram stained microscopy. It should be noted that the current methodology for monitoring the suitability of nutrient media in Ukraine does not sufficiently consider the specifics of sanitary and microbiological studies of food products. Thus, according to the information letter of the Ministry of Healthcare of Ukraine [4], Endo agar selectivity can be considered acceptable if at least 108 cells of Staphylococcus aureus strain ATCC 25923 are inhibited. The reason for this condition may be the direction of the said regulatory document mainly to laboratories that carry out microbiological diagnosis of infectious diseases, including purulent-inflammatory ones, caused by S. aureus. But these bacteria are rarely found in food products. But DSTU ISO 11133-2: 2006 [5], which relates to testing food products and feed, offers a typical representative of the intestinal micro-flora (Enterococcus faecalis ATCC 29212) as a non-target microorganism for controlling the selectivity of the medium for Escherichia coli group bacteria. Unlike regulatory documents of ministries and departments, state standards in Ukraine are not binding. At the same time, a significant part of laboratories researching food products subordinate to the Ministry of Healthcare and in their work should be guided by the above-mentioned information letter [4].

Therefore, it is necessary to consider the reports concerning the possible growth of red colonies with a metallic lustre, which are typical for coliform bacteria and do not even belong to the family of enterobacteria (Fig. 1), in Endo medium. So, examining pasteurized juices on Endo medium, we observed the colonies with the above-mentioned characteristics, but with further microscopy we found large, gram-positive cells of a round shape like yeast. (Fig. 2)

Thus, adherence to standardized techniques for compulsory microscopy of suspicious colonies, including "typical-type" ones, should be mandatory for identification of coliform bacteria. The question also arises as to the appropriateness of revising the list of test strains to control Endo agar selectivity. To spread the use of chromogenic agar for the selective detection and identification of coliform bacteria and E. coli [6] on foods other than milk is promising. This medium makes it possible to identify the most specific

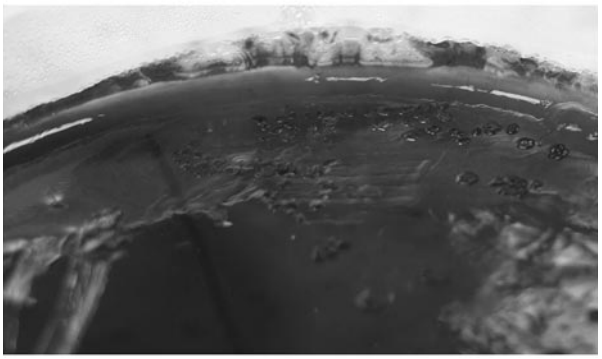

Fig. 1. "Typical colonies" on Endo agar that do not belong to enterobacteria.

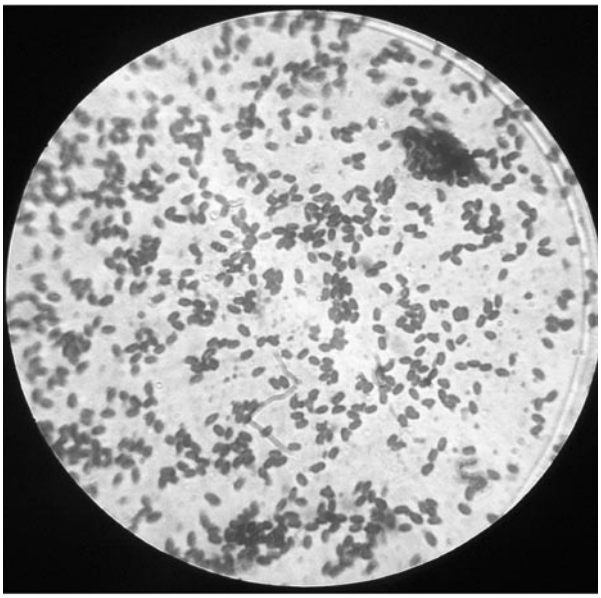

Fig. 2. Morphology of the cells of "typical" colonies on Endo agar

and stable signs of the mentioned bacteria, namely beta-D-galactosidase and beta-D-glucuronidase activity.

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