

ISOLATION OF ENTEROCOCCI FROM MEAT AT HISAR

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SUMMARY

Enterococci were isolated from 35 out of 37 (94.6%) samples of meat including chicken (10), chevon (11), pork (10) and buffen (6). Twelve different species of *Enterococcus* were encountered. *E. faecalis* (73%) was the most prevalent species, followed by *E. gallinarum* (45.9%) and *E. raffinosus* (37.8%). Other species included *E. faecium*, *E. durans*, *E. hirae*, *E. mundtii*, *E. solitarius*, *E. pseudoavium*, *E. dispar*, *E. cecorum* and *E. avium*.

Key words: *Enterococcus*, enterococci, meat, buffen

Enterococci, earlier grouped under the genus *Streptococcus*, have now been placed in a separate genus *Enterococcus* and include 16 species (Holt *et al.*, 1994). Due to their ubiquitous nature and ability to survive in adverse environmental conditions, enterococci are frequently encountered in foods as contaminants. These are generally considered harmless commensals and their presence is taken as an indicator of unhygienic processing of food. Enterococci as normal inhabitants of gastrointestinal tract of the animals, may gain access to meat and meat products consequent to unhygienic slaughtering, processing and handling of meat. A number of recent reports have implicated enterococci as significant pathogens capable of causing serious public health problems (Moellering, 1992, Huycke *et al.*, 1998). Indiscriminate use of antibiotics and growth promoters in animals has probably led to emergence of multiple antimicrobial drug resistance among the enterococci and their transmission to man via the food chain (Moellering, 1992, Bogaard *et al.*, 1997). The present investigations were carried out to study the prevalence of *Enterococcus* species in meat of different species of animals.

Thirty-seven samples of fresh raw meat including chicken (10), chevon (11), pork (10) and buffen (6) were collected in sterile containers

from retail vendors at Hisar and transferred to the laboratory immediately. Isolation of *Enterococcus* sp. was done on m-Enterococcus agar (Slanetz and Bartley, 1957) and representative colonies from different morphological groups were identified on the basis of morphological, cultural and biochemical features (Holt *et al.*, 1994).

The enterococci present in 35 out of 37 (94.6%) samples belonged to 12 different species of *Enterococcus* (Table 1). The positive samples usually carried more than one species of *enterococcus*. The most prevalent species was *E. faecalis* (27/37) followed by *E. gallinarum* (17/37) and *E. raffinosus* (14/37). The least frequently encountered species were *E. durans* (1/37) and *E. avium* (2/37), detected in chicken samples only. Other species included *E. faecium*, *E. hirae*, *E. mundtii*, *E. solitarius*, *E. pseudoavium*, *E. dispar* and *E. cecorum* (Table 1). In chicken meat, *E. faecalis* (9/10) was the most common species followed by *E. gallinarum* (6/10), *E. raffinosus* (3/10), *E. avium* (2/10) and *E. pseudoavium* (2/10). In chevon, *E. faecalis* was again the most prevalent species (8/11) followed by *E. gallinarum* and *E. cecorum* (5/11). In pork, *E. faecalis* (7/10) was followed by *E. gallinarum*, *E. hirae*, *E. raffinosus* and *E. dispar* (3/10), but in buffen, the most prevalent species was *E. raffinosus* (4/6) followed by *E. faecalis* and *E. gallinarum* (3/6 each).

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