ISOLATION AND CHARACTERIZATION OF ENTEROHAEMORRHAGIC ESCHERICHIA COLI O157:H7 FROM DAIRY RELATED SOURCES IN TAMIL NADU, INDIA

BY

R.Annal Villi and A.Elango
Dept. of Dairy Science, Veterinary College & Research Institute,
Namakkal-637 002, Tamil Nadu
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SUMMARY

Enterohaemorrhagic Escherichia coli O157: H7 is the most important serotype of great public health concern causing bloody diarrhoea, haemo-rhagic colitis, haemorrhagic uraemic syndrome, thrombotic thrombocytopenic purpura and CNS dysfunctions. As cattle are considered significant reservoirs of E. coli O157:H7 worldwide, a study to assess the incidence and characterization highly virulent Escherichia coli O157: H7 strains from dairy related sources and milk products. From a total of 132 samples comprising 24 dung samples, 12 milk utensil rinse samples, 24 raw milk, 12 each of khoa and its sweet samples, channa and its sweets samples, cream, cheese, and 24 ice cream variety samples, a total of 69 Escherichia coli isolates were obtained. The biochemical characterization specific for enterohaemorrhagic Escherichia coli O157: H7, yielded 6 isolates found to be of EHEC by their negative reaction both sorbitol fermentation and β-glucuronidase activity which is typical for Enterohaemorrhagic Escherichia coli O157: H7, which is also confirmed on serotyping using O157 and H7 antisera by slide agglutination. The plasmid profile analysis of all the six isolates revealed the presence of a plasmid of large size of 62.5 MDa in all the Escherichia coli O157: H7 isolates, with a tract of 68.7 to 62.5 MDa which is typical of Escherichia coli O157: H7 and thus confirming the conventional methods of identification.

Key words: E.coli O157:H7, incidence, dairy, serotyping and plasmid profile