SUMMARY

Determining virulence factors of Shiga toxin-producing *Escherichia coli* in cattle with mastitis

Shiga toxin producing *Escherichia coli (*STEC) is a major pathogen causing severe diseases in humans, like diarrhoea, haemorrhagic colitis and haemolytic-uraemic syndrome. The usual habitat of STEC is the intestinal tract of ruminants, especially cattle. STEC is an important problem in development countries. Foods that become contaminated with faeces from these animals serve as the primary source of human infection.

The aim of this study is to determine the presence of shiga toxin (*stx1* and *stx2*) and intimin (*eaeA*) genes in shiga toxin producing *Escherichia coli* (STEC) strains that isolated from bovine milk in Aydın with Polimerase Chain Reaction (PCR) and serotyping of these isolates. The material of our study were consisted to 160 milk samples taken from 160 subclinic mastitic dairy cows. By phenotypical identification, 31 isolates that were determined as *Escherichia coli* were also performed genetically identification. The presence of shiga toxin (*stx1* and *stx2*) and intimin (*eaeA)* genes in this isolates was revealed with multiplex PCR using spesific primers. *E. coli* isolates were identified to determine O26, O55, O86, O111, O114, O119, O125, O126, O127, O128, O142 and O158 serotypes by slide agglutination method with polyvalent (II, III and IV) sera. These isolates was carried out using the slide agglutination method with polyvalent II, polyvalent III and polyvalent IV sera. *E. coli* serotypes were determined using the slide agglutination method. According to this assessment, a total of 8 of 31 isolates were identified as polyvalent II, 14 of 31 isolates were identified as polyvalent III and 9 of 31 isolates were identified as polyvalent IV. For investigation of the precise status of the infections caused by *eaeA* positive STEC strains in dairy cows further epidemiologic studies should be designed.

Key words: *Escherichia coli*, STEC, Mastitis, Shiga toxin (*stx1* and*stx2*), İntimin (*eaeA*), Serogrouping, PCR