

## SUMMARY

### **Sezgin E. Investigating of the presence of *Escherichia coli* O157:H7 in minced beef and hamburger meatballs which consumed in Aydin region.**

*Escherichia coli* is the name of a type of bacteria that lives in human intestines and in the intestines of animals. Although most types of *E. coli* are harmless, some types can cause diseases. The worst type of *E. coli*, known as *E. coli* O157:H7, causes bloody diarrhea and also sometimes causes kidney failure and even death. *E. coli* O157:H7 makes a toxin called Shiga toxin and is known as a shiga toxin-producing *E. coli* (STEC).

Cattle are thought to be the main source of *E. coli* O157:H7, and bovine products have often been implicated in food borne infections. *E. coli* O157:H7 was first recognised as a human pathogen in 1982. Since then, this serotype has been identified in many countries as the predominant cause of haemorrhagic colitis and subsequent severe and sometimes fatal conditions, haemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura (TTP).

This study was carried out to investigate the presence of *Escherichia coli* O157:H7 serotype in minced beef and uncooked beef burgers collected from butcher shops and supermarkets located in Aydin region. For this purpose, 30 minced beef and 50 uncooked hamburger meatballs purchased from different supermarkets and butcher shops were analyzed for the presence of *Escherichia coli* O157:H7 serotype. A total of 12 samples were isolated as *E. coli* O157 serotypes from 6 minced beef and 6 uncooked hamburger meatballs by conventional culture techniques. A total of 10 samples were identified as the H7 serotype isolated from 4 minced beef and 6 uncooked hamburger meatballs.

In conclusion, presence of *E. coli* O157:H7 in minced beef and hamburger is indicated that the product might be contaminated with *E. coli* O157:H7 in any stages of the production line. Adequate heating process for all ground beef and hamburger meat balls during cooking should be applied in order to eliminate this pathogen organism. Ground meat and hamburger meatballs should be cooked properly and internal temperature of meat products should be at least 72°C.

**Keywords:** Minced beef, hamburger, *E. coli* O157:H7, meatball