Intisari

Deteksi *Escherichia coli* O157:H7 pada Air, Feses Babi dan Daging Babi Di Rumah Potong Hewan (RPH) Jagalan dan Pasar Tradisonal Kota Surakarta – Jawa Tengah

Escherichia coli O157:H7 merupakan salah satu strain *Enterohemorrhagic E. coli* (EHEC) yang bersifat patogen terhadap manusia. Manusia yang mengonsumsi daging yang dicemari *E. coli* O157:H7 akan terinfeksi, mulanya menyebabkan diare tidak berdarah yang disertai dengan kram perut, kemudian berkembang menjadi diare berdarah dan *hemolytic uremic syndrome* (HUS) yang menyebabkan gagal ginjal pada manusia. Kasus *foodborne disease* maupun data tentang cemaran *E. coli* O157:H7 pada daging babi di Surakarta – Jawa Tengah masih sangat minim dilaporkan, padahal data tersebut dapat digunakan sebagai acuan untuk dilakukan tindakan pencegahan. Penelitian ini bertujuan mendeteksi *E. coli* O157:H7 pada daging babi, feses babi, dan air di RPH Jagalan serta pada daging babi di pasar tradisional Kota Surakarta – Jawa Tengah, selain itu juga untuk mendeteksi gen *stx2a* dari isolat *E. coli* O157:H7 yang diisolasi dari daging babi, feses babi dan air dari RPH Jagalan serta daging babi dari pasar tradisional Kota Surakarta – Jawa Tengah. Total sampel sebanyak 102, terdiri dari 32 sampel daging babi, 32 sampel feses babi dan 6 sampel air dari RPH Jagalan serta 32 sampel daging babi dari pasar tradisional Kota Surakarta – Jawa Tengah. Pemilihan unit sampel di RPH dan pasar dilakukan secara *convenient sampling*. Isolasi dan identifikasi *E. coli* O157:H7 dilakukan secara konvensional yaitu kultur pada media EMBA dan SMAC serta dikonfirmasi secara molekuler dengan PCR untuk mengamplifikasi gen target *rfbE* (317 bp) dan *fliC* (381 bp). Isolat yang teridentifikasi sebagai *E. coli* O157:H7 dilakukan deteksi gen *stx2a* (553 bp). Data yang dihasilkan dari penelitian ini dianalisis secara deskriptif. Hasil penelitian ini menujukkan bahwa ditemukan *E. coli* O157:H7 sebesar 28,6 % (20/70) di RPH Jagalan dengan rincian 33,3 % (2/6) dari sampel air, 31,25 % (10/32) dari sampel feses babi dan 25 % (8/32) dari sampel daging babi. Dari pasar tradisional Kota Surakarta – Jawa Tengah ditemukan sebesar 34,4 % (11/32). Isolat yang teridentifikasi sebagai *E. coli* O157:H7 sebagian besar mengandung gen *stx2a* yaitu sebesar 83,9 % (26/31), dengan rincian 87,5% (7/8) dari sampel daging babi, 70% (7/10) dari sampel feses dan 50% (1/2) dari sampel air yang diambil dari RPH Jagalan serta 100 % (11/11) dari sampel daging babi yang diambil dari pasar tradisional Kota Surakarta – Jawa Tengah. Disimpulkan bahwa *E. coli* O157:H7 ditemukan pada air, feses babi dan daging babi di RPH Jagalan serta pada daging babi di pasar tradisional Kota Surakarta – Jawa Tengah, sebagian besar isolat mengandung gen *stx2a*.

Kata kunci : Air, feses babi, daging babi, *E. coli* O157:H7, *foodborne disease*, pasar tradisional, rumah potong hewan

Abstract

Detection of *Escherichia coli* O157:H7 in Water, Pig Feces and Pork in Jagalan Slaughterhouses and Traditional Markets in Surakarta-Central Java

Escherichia coli O157: H7 is one of the strains of *Enterohemorrhagic E. coli* (EHEC) that are pathogenic to humans. Humans consuming meat contaminated with *E. coli* O157: H7 will become infected, initially causing non-bleeding diarrhea accompanied by abdominal cramps, and then developing into bloody diarrhea and Hemolytic Uremic Syndrome (HUS) which causes kidney failure in humans. The case of foodborne disease and data on *E. coli* O157: H7 contamination in pork in Surakarta - Central Java are still very minimal reported, even though the data can be used as a reference for prevention measures. This study aims to detect *E. coli* O157: H7 in water, pig feces and pork in Jagalan Slaughterhouses as well as pork in the traditional market of Surakarta City - Central Java, detecting the *stx2a* gene from *E. coli* O157:H7 isolates isolated from water, pig feces and pork from Jagalan slaughterhouses and pork from the traditional market of Surakarta City - Central Java. The total sample was 102, consisting of 32 pork samples, 32 pig feces samples and 6 water samples from Jagalan Slaughterhouses and 32 pork samples from the Surakarta market in Central Java. The selection of sample units in slaughterhouses and the market is done by convenience sampling. Isolation and identification of *E. coli* O157:H7 was carried out conventionally by culture on EMBA and SMAC media and confirmed molecularly by PCR in order to amplify the target *rfbE* (317 bp) and *fliC* (381 bp) genes. The isolates identified as *E. coli* O157:H7 were *stx2a* gene detection (553 bp). The data generated from this study were analyzed descriptively. The results of this study showed that *E. coli* O157: H7 found was 28.6% (20/70) in Jagalan Slaughterhouses, consists of 33.3% (2/6) of water samples, 31.25% (10/32) samples of pig feces and 25% (8/32) of pork samples. From the traditional market of Surakarta - Central Java, it was found to be 34.4% (11/32). The isolates identified as *E. coli* O157: H7 mostly contained the *stx2a* gene which was 83.9% (26/31), with 87.5% (7/8) of pork samples, 70% (7/10) from feces samples and 50% (1/2) of water samples taken from Jagalan Slaughterhouses and 100% (11/11) of pork samples taken from traditional markets in Surakarta City - Central Java. It was concluded that *E. coli* O157: H7 was found in water, pig feces and pork in Jagalan Slaughterhouses as well as in pork in the traditional market of Surakarta City - Central Java, most of the isolates contained the *stx2a* gene.

Keywords: water, pig feces, Pork, *E. coli* O157: H7, foodborne disease, traditional markets, Slaughterhouses