

## ABSTRAK

### **DETEKSI *Escherichia coli* PADA SUSU DI PETERNAKAN RAKYAT KANDANG INDIVIDU DAN KELOMPOK**

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Kualitas produksi susu sapi di peternakan rakyat masih rendah dan memiliki nilai *Total Plate Count* yang tinggi. Penelitian ini bertujuan untuk mengetahui adanya pencemaran *Escherichia coli* pada susu dan menghitung jumlah MPN *Escherichia coli* pada susu di peternakan rakyat kandang individu dan kelompok.

Sampel susu diambil dari tiga kandang yang berasal dari dua kandang individu dan satu kandang kelompok. Setiap kandang individu diambil satu sampel susu. Sampel kandang kelompok diambil dua sampel susu. Sampel susu yang diambil langsung setelah diperah, dimasukkan ke dalam plastik yang sudah disterilisasi menggunakan autoklaf dan dibawa menggunakan *cooling box* untuk dilakukan uji MPN. Sampel susu diencerkan dengan pengenceran  $10^{-1}$ ,  $10^{-2}$ , dan  $10^{-3}$ . Sampel dengan pengenceran  $10^{-1}$  dan  $10^{-2}$  dimasukkan sebanyak 1 ml ke dalam 5 seri tabung yang berisi 9 ml media LSTB dan tabung Durham. Sampel dengan pengenceran  $10^{-3}$  dimasukkan sebanyak 10 ml ke dalam tabung media LSTB 10 ml berisi tabung Durham. Tabung diinkubasi pada suhu 37 °C selama 24 jam. Sampel yang positif diinokulasikan ke dalam media *EC broth* dan diinkubasi dalam suhu 44 °C selama 24 jam. Sampel dari *EC broth* yang positif diinokulasi ke media BPW dan diinkubasi dalam suhu 44 °C selama 48 jam. Sampel dalam BPW diuji indol dengan cara ditetesi reagen Kovacs. Data dianalisis dengan tabel APM seri 5 tabung sesuai SNI ISO 7251:2012.

Hasil uji menunjukkan bahwa *E. coli* terdapat pada semua sampel susu. Nilai MPN susu kandang individu adalah 0,90 dan kandang kelompok 0,99. Nilai MPN *E. coli* dalam susu tersebut di bawah nilai SNI (<3/ml). Hasil pengujian yang positif pada media *EC broth* dengan jumlah yang lebih tinggi pada kandang individu diduga karena terdapat cemaran *coliform* selain *E. coli*.

Kata kunci: Susu, *E coli*, MPN

## ABSTRACT

### DETECTION OF *Escherichia coli* IN MILK IN INDIVIDUAL AND GROUP PEOPLE'S DAIRY FARM

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The quality of cow's milk production in people's farms is still low and has a high Total Plate Count value. This study aimed to be detecting the contamination of *Escherichia coli* in milk and calculate the MPN of *Escherichia coli* in milk on individual and group dairy farms.

Milk samples were taken from three farms of two individual farms and one group farm. Each individual farm was taken one milk sample. The group cage samples were taken from two milk samples. Milk samples taken directly after milking, put by plastic that has been sterilized using an autoclave and taken using a cooling box for the MPN test. Milk samples are diluted in 10-1, 10-2, and 10-3. One tube of the sample with a dilution of 10-1 and 10-2 were added in 1 ml into the tube of 5 series of 9 ml LSTB media containing Durham tube. Samples with 10-3 dilutions were added 10 ml BPW samples into a 10 ml LSTB media tube containing a Durham tube. The tubes were incubated at 37 ° C for 24 hours. Positive samples were inoculated into EC broth media and incubated at 44 ° C for 24 hours. Positive samples from EC broth were inoculated into BPW media and incubated at 44 ° C for 48 hours. The tubes in the BPW were tested for indole by Kovacs reagents. Data were analyzed by APM series 5 tube tables according to SNI ISO 7251: 2012.

The test results showed that *E. coli* were found in all milk samples. The individual farm MPN value is 0.90 and the group farm is 0.99. The MPN value of *E. coli* in milk is under the SNI value (<3 / ml). Positive test results on *EC broth* media with higher amounts in the individual farm was thought due to *coliform* contamination other than *E. coli*.

Keywords: Milk, *E. coli*, MPN