

()

()

*

(// : // :)

(*)

" "

()

/

/

()

()

:

()

(HACCP)

()

1. Total count

: *

E-mail: emamj@ut.ac.ir

- :

()

HACCP

()

()

()

% / % /

) ()

() () %

/ cfu/cm²

() % /

°C

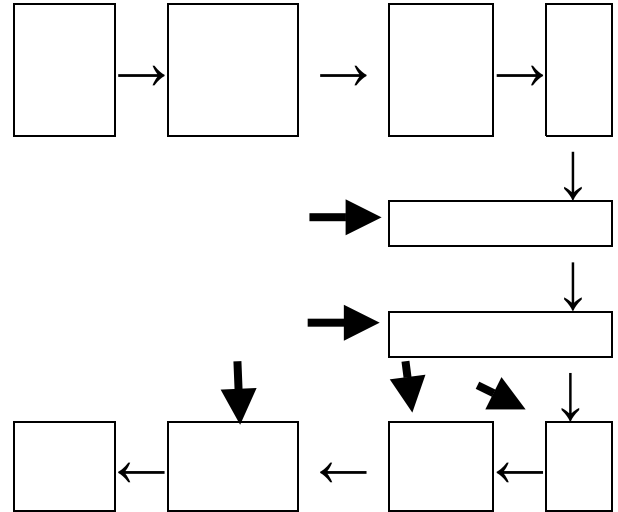
(°C)
() ()

(
 .()

()

.()

()
 °C



(BA 6024 Steward Co.,UK)

(/ / /)

± / °C

8

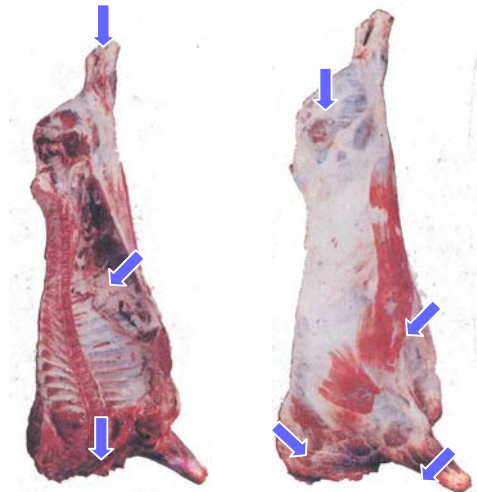
°C

.()

.()

$$Cs = \frac{N}{V_1 f_1 + V_2 f_2 + \dots} \times Vs$$

2. Nutrient Agar (Merck Co., Germany)
3. Pour Plate
4. Shaker



)

×

1. Buffered Peptone Water (Merck Co., Germany)

() f_2 f_1 : Cs
) V_1, V_2 : V1, V2
 (f_2, f_1 : f_2, f_1
 : Vs
 : N

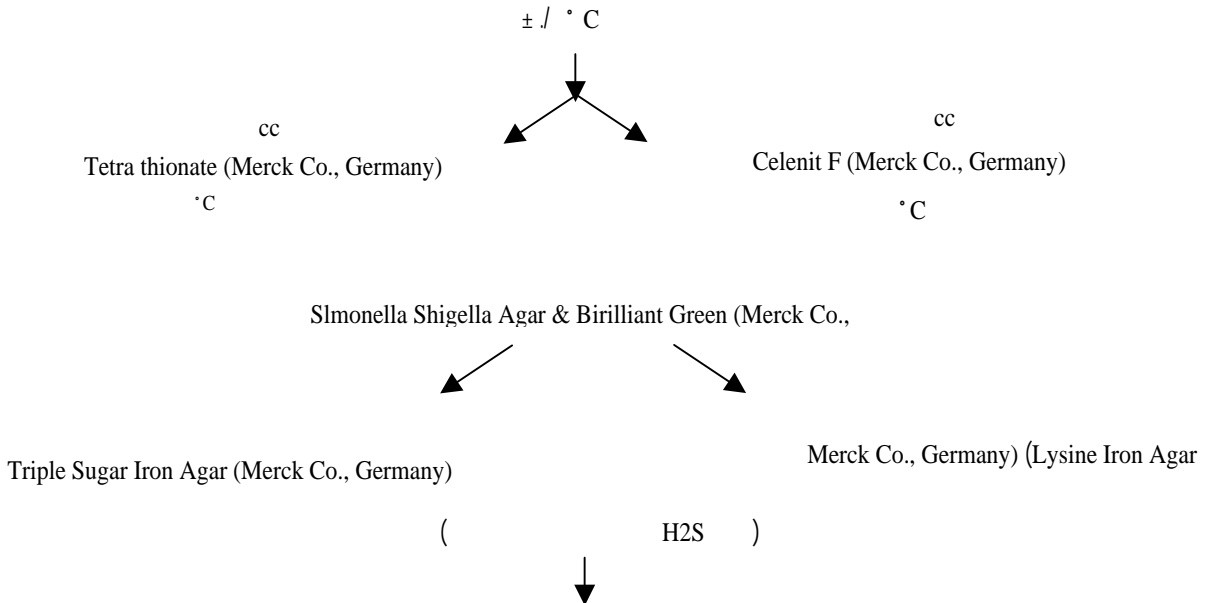
(/ / /) °C
 °C

) MPN

± / °C

-
- 3. Indole (Merck Co., Germany)
 - 4. Lactose Broth (Merck Co., Germany)
 - 5. Most Probable Number

-
- 1. Double Brilliant Green (Merck Co., Germany)
 - 2. Durham



...

:

log N

log cfu.cm⁻²

EXCEL

()

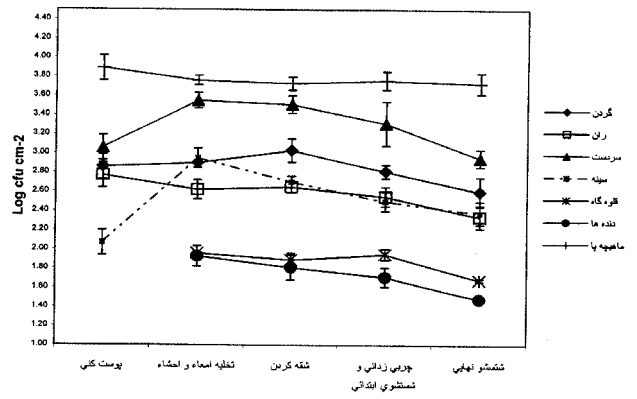
()

%

()

HACCP

/



/ / ()

)

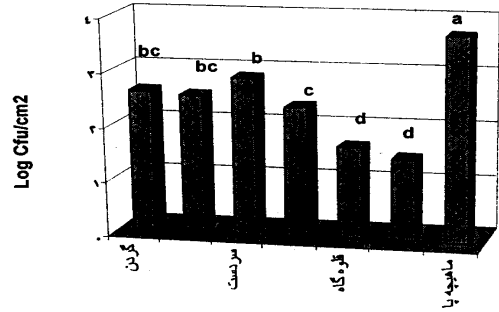
(

()

()

()

()



()

*

()

*

FDA

()

" "

" " (< cfu/cm²) " " (> cfu/cm²)

() (< cfu/cm²)

()

/ ± /

/ ± /

/ ± /

/ ± /

/ ± /

/ ± /

/ ± /

±

() () (log N)

* / ± /

/ ± /

/ ± /

*

±

()

/ /

/ /

HACCP

//

REFERENCES

HACCP

8. Arenas, D. M, L. Huertaleidenz, & Y. Ortiz, 2002. Microbiological contamination on beef carcasses in a small abattoir in Venezuela, Published Report from University of Zuilá.
9. Bayalan, M. D. Alemayehu, & W. Salah. 2002. Sources and distribution of *Salmonella* serotypes isolated from food animals, slaughterhouse personnel and retail meat products in Ethiopia: 1997-2002. *Ethiop. J. Health Dev.*
10. Cabedo, L., J. N. Sofos & G.C. Smith.1996. Removal of bacteria from beef tissue by spray washing after different times of exposure to fecal material. *J. Food Protection.* 59 (12): 1284-1287.
11. Dickson, J. S., H. S. Hurd., & M. H. Rostagno. 2003. *Salmonella* in the pork production chain. National pork Board, Des Moines, Iowa USA 50011.
12. Donkersgoed, J. 1998, Preslaughter hide status of cattle and the microbiology of carcass. *J. Food Protection.* 60 (12): 1502-1508.
13. Gannon, V. P. J. 1999. Control of *Escherichia coli* O157 :H7 at slaughter. In: *Escherichia coli* O157: H7 in farm animals, Eds: Stewart G. C. & H. J. Flint, CABI Publishing, Wallingford, UK., pp: 169-193.

14. Geof, C. M. 1994. Microbiological hazards from red meat and their control. *British Food Journal*. 96 (8): 33-36.
15. Gill, C. O., & J. C. McGinnis, 1999. Improvement of hygienic performance of the hindquarters skinning operations at a beef packing plant. *Int. J. Food Microbiology*. 51: 123-132.
16. Jay, J. M. 2000. *Modern Food Microbiology*, 6th ed. Aspen Publishers, Inc., Gaithersburg, MD.
17. Klaus. W, C. G. Kozub, P. J. Gannon, & E. J. Thoomas. 1997. Verification of the level of microbiological control for the slaughter and cooling processes of beef carcass production at a high-line-speed abattoir. *J. Food Protection*, 60 (12): 1509-1514.
18. Pearse, R. A., D. J. Bolton, J. J. Sheridan, D. A. Mcdowell, I. S. Blair and D. Harrington. 2004. studies to determine the critical control points in prok slaughter hazard analysis and critical control point system. *Int. J. Food Microbiology* 90: 331-339.
19. Ransom. J. R, K. E. Belk, J. N. Sofos, J. D. Stopforth, J. A. Scanga, & G. C. Smith. 2003. Comparison of intervention Technologies for reducing *Escherichia coli* O157: H7 on beef cuts and trimmings. *Food Protection Trends*. 23(1): 24-36.
20. Sofos, J. N., S. L. Kochevar., G. R. Bellinger, D. R. Buege, D. D. Hancock, S. C. Ingham, J. B. Morgan, J. O. Reagan & G. C. Smith. 1999. Sources and extent of microbiological contamination of beef carcasses in seven United States slaughtering plants. *J. Food protection*. 62(2): 140-145.
21. Sumner, J., E. Petternas, P. Dean, P. Dowsett, G. West, R. Wiering & G. Raven. 2003. Microbial contamination on beef and sheep carcasses in South Australia. *Int. J. Food Microbiology*. 81: 255-260.
22. Varnam, A. H, 1991, *Food Borne Pathogens*, Wolfe Publishing Ltd.