

THESIS

***Coliform* COUNTS OF RAW MILK PERANAKAN ETAWA (PE) GOAT
FROM SMALLHOLDER DAIRY GOAT FARMS IN GOMBENGSARI
BANYUWANGI USING MOST PROBABLE NUMBER (MPN) TEST**



By

ANGEL JELITA BRILLIANT YURI

SIN 061611133188

FACULTY OF VETERINARY MEDICINE

UNIVERSITAS AIRLANGGA

SURABAYA

2020

**Coliform COUNTS OF RAW MILK PERANAKAN ETAWA (PE)
GOAT FROM SMALLHOLDER DAIRY GOAT FARMS IN
GOMBENGSAARI BANYUWANGI USING
MOST PROBABLE NUMBER
(MPN) TEST**

Thesis

Submitted as partial fulfillment of requirements for the degree of
Bachelor of Veterinary Medicine

at

Faculty of Veterinary Medicine, Universitas Airlangga, Surabaya

By:

ANGEL JELITA BRILLIANT YURI
SIN 061611133188

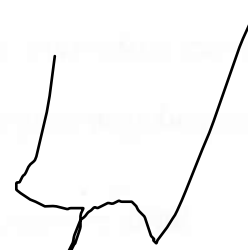
Approving

Supervisor Committees,



(Dr. Nenny Harijani, drh., M.Si.)

Supervisor



(Dr. Kuncoro Puguh S., drh., M.Kes.)

Co-Supervisor

DECLARATION

I hereby declare that this thesis entitled

***Coliform Counts of Raw Milk Peranakan Etawa (PE) Goat from
Smallholder Dairy Goat Farms in Gombengsari, Banyuwangi
Using Most Probable Number (MPN) Test***

Submission is originally conducted by me and that to the best of my knowledge and belief. It contains no material previously published or written by other neither person nor material except those referred to in this manuscript are mentioned in the bibliography to obtain a bachelor degree from a particular institution.

Surabaya, 13th July 2020



Angel Jelita Brilliant Yuri

SIN. 061611133188

Research Result Seminar Assessment

Date: 16th June 2020

RESEARCH RESULT SEMINAR COMMISSION OF EXAMINER

Head of examiner : Dr. Dadik Raharjo, drh., M.Kes.

Secretary examiner : Dr. Mohammad Anam Al Arif, M.P., drh.

Member of examiner : Dr. Rimayanti, drh., M.Kes.

Supervisor : Dr. Nenny Harijani, drh., M.Si.

Co-Supervisor : Dr. Kuncoro Puguh Santoso, drh., M.Kes.

Thesis Assessment

Date: 13th July 2020

THESIS SEMINAR ASSESSMENT COMMITTEE

Head of examiner : Dr. Dadik Raharjo, drh., M.Kes.

Secretary examiner : Dr. Mohammad Anam Al Arif, M.P., drh.

Member of examiner : Dr. Rimayanti, drh., M.Kes.

Supervisor : Dr. Nenny Harijani, drh., M.Si.

Co-Supervisor : Dr. Kuncoro Puguh Santoso, drh., M.Kes.

Surabaya, 13th July 2020

Faculty of Veterinary Medicine

Universitas Airlangga

Dean,



Prof. Dr. Puji Srianto, dvm., M.Kes.
NIP. 195601051986011001

SUMMARY

Raw milk is liquid derived from healthy and clean cow udder, obtained in the right milking way, with the original content is not reduced or added by anything and has not gotten any treatment except cooling (SNI, 2010). Goat milk is recognized as a complete diet due to its essential nutrients components, not allergens (Park *et al.*, 2007), and has high digestibility (Suwito *et al.*, 2014).

Milk is an excellent medium for the growth of various microorganisms because of its high nutritional content. The microorganism contamination may come from the environment in farm and the low level of sanitation application during milk handling in the animal housing. *Coliform* is one of the microorganisms that is generally found in raw milk and used as an indicator of contamination and sanitation conditions that are not good for water, feed, milk, and dairy products. Therefore, to ensure the quality of raw milk, Indonesia applied a regulation of the maximum limit of microorganisms contamination in SNI 7388:2009 that has standard 2×10^1 MPN/mL for *coliform*.

The research design used in this research was descriptive experimental, to determine the number of *coliform* in raw milk *Peranakan Etawa* (PE) from smallholder dairy goat farms in Gombengsari, Banyuwangi. The research used 33 samples from 11 farms and used Most Probable Number (MPN) method. The result of data were analyzed with Kruskal Wallis and continuous test with Mann Whitney test. Interview data were used to determine the level of sanitation in each farm.

The result of MPN calculation in this research obtained the number of positive samples according to McCarty table and SNI 7388:2009. There are 26 samples in nine farms that exceed the maximum limit of *coliform* contamination in raw milk. The percentage of raw milk samples that exceed the standard is 79%, while the farm-scale is 81%. The lowest *coliform* contamination is $1.2 \cdot 10^1 \pm 0.6 \cdot 10^1$ MPN/mL (F9) while the highest is >1600 MPN/mL (F3, F4, F5, F6, and F11). The contamination of *coliform* may occur due to poor sanitation and hygiene on the farm and the equipment.