ISOLATION AND IDENTIFICATION OF *Escherichia coli* ISOLATED FROM LAYER CHICKEN IN CHICKEN VILLAGE, NORTH LOMBOK

Oleh:

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Abstract. *Escherichia coli* in poultry can cause colibacillosis,If layer chicken in a poultry village is attacked by colibacillosis it will cause significant losses. Besides colibacillosis has become a concern in foodborne phatogen and stated risk of transmission to human. Based on this fact, we want to isolation and identification whether the cause of diarrehea in layer chickens in Kampung Unggas is *E. coli* because it's risk to animal, human and environment health, and for effective medical treatment in layer chicken.The results of the recapitulation show that from 32 samples tested 27 positive (Prevalence positive samples 84%) of *E. coli* with biochemical test results such as previous studies

Keywords**:** Layer chicken, *Escherichia coli,* Colibacillosis

INTRODUCTION

Eschericia coli can cause diarrhe or hemmorhagic colitis in human and animal, these organism predilection in the intestinal tract and shed them in the feces. Human aquire by direct contact with animal carriers, their feces, infected people, and contaminated soil or water, or via the ingestion of underdone meat (CFSPH, 2016). *Escherichia coli* in poultry can cause colibacillosis, clinical sign of collibacillosis was colisepticemia, coliganulomatosis, omphalmitis and yolk sac infection, Economic impact in layer losses are associater with decreased growth rates, mortality and egg production (Mailyan, 2016).

Kampung Unggas is Village which produce and supply egg for Three Gili as tourist destination in Lombok Island. They are Gili Trawangan, Gili Meno, and Gili Air. If layer chicken in a poultry village is attacked by colibacillosis it will cause significant losses. Besides colibacillosis has become a concern in foodborne phatogen and stated risk of transmission to human (Tarmudji, 2003). Farmer in Kampung Unggas reported that many layer chicken that were raised had diarrhea, which caaaused a decrease in the amounth of egg production, in addition there were gums which had diarrhea like chalk. Mailyan (2016) says that lession efect colibasillosis can allow with opportunistic bacteria like *Pseudomonas*, *Salmonella*, *Staphylococcus*, *enteric Streptococcus* etc.

Based on this fact, we want to isolation and identification whether the cause of diarrehea in layer chickens in Kampung Unggas is *E. coli* because it's risk to animal, human and environment health, and for effective medical treatment in layer chicken.

MATERIAL AND METHODS

This study was conducted March 2018 in Santong district, North Lombok, Indonesia. This State is located at -8.2939809°S, 116.2748427°. Santong, also known as the Poultry village (Kampung Unggas). This Villages have farmer association, the name is Asosiasi Peternakan Ayam Petelur dan Pedaging Gerbang Telur Emas (Gemas).

The target population are 40,000 layer chiken of 37 commercial layer chicken farms. Therefore 2 of 37 commercial layer chicken farms was choosen from based on case report and number of population of each farms. So, 16 samples taken on each farms for a total of 32 samples.

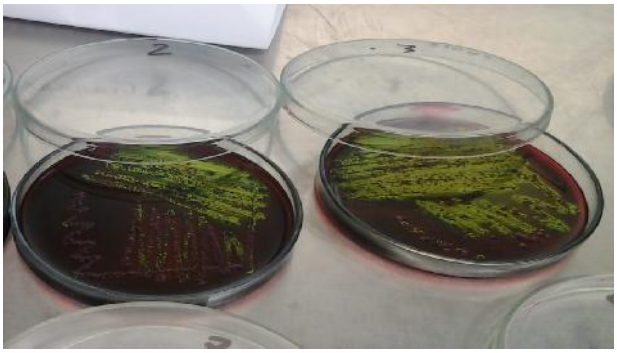
Samples was taken with sterile cotton swabs from the cloacae of live poultry and the samples was kept cold during transport. The Samples was dipped in sterile BHI and incubated over the night. After 24 hours the samples was inoculated in Eosin Methylen Blue Agar (EMBA) under aerobic conditions at Balai Laboratorium Kesehatan Masyarakat Pulau Lombok. The colonies will be purified and characterized by standard Gram staining and biochemical methods. Gram-negative and gram-positve of bacteria isolated of was determined by standard biochemical procedures using Bergey's Manual, book of Clinical Veterinary Microbiology, and Basic Laboratory Procedure of World Health Organization(WHO, 2016).

The results are shown in the form of tables, photos and narratives used to explain the morphology and biochemical tests that will be described descriptively

RESULT AND DISCUSSION

a. Isolation of Bacteria

The result of isolation bacteria showed that from 32 sampels, 27 samples positif *Escherichia coli*, 13 sampel from farm 1 and 14 sampel from



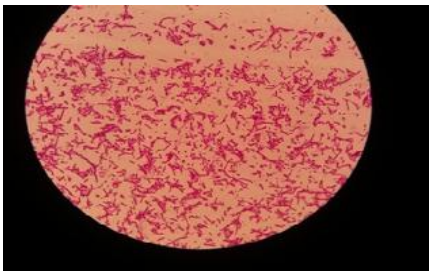
farm 2. Coloni in EMBA showed the color is green metalic. Coloni show in picture1.

Picture 1. *Eschericia coli* on media Eosin Methylene Blue Agar

Prevalence positive samples 84%, Wledosari and Wahyuwardani (2015) in a case study on chicken farms showed the highest number of diseases was colibacillosis which attacked all age groups. This disease is commonly found in farms with poor clean conditions, quite a strong smell of ammonia. It's caused by opportunistic E. coli bacteria which normally exist in the digestive tract in normal amounts, but when chickens with high stress levels can become pathogens. When released with feces it can pollute the environment (Barnes et al., 2003).

b. Biochemical test

From Emba bacteri was tested with gram, to know form bacteria, picture 2 that show, it's colony bacteri gram negative, shaped rod and not spearheaded. After that bacteria isolated on sugar media for know biochemical test. Test result biochemical test from 27 sampels can be seen in tabel 1.



Picture 2. Morfologi of colony

Tabel 1. Biochemical test *Escherichia coli*from 27 green color on EMBA

TSIA	Positif (+)
SIM	Positif (+)
Cimon Citrat	Negatif (-)
Glukosa	Positif (+)
Laktosa	Positif (+)
Manitol	Positif (+)
Malonat	Positif (+)
Sukrosa	Positif (+)
Sorbitol	Positif (+)
Urea	Negatif (-)

Description :

TSIA : Triple Sugar Iron Agar
SIM : Sulfide Indole Motility

In the present study the isolated *E. coli* organism fermented glucose, lactose with the production of both acid and gas, and the Indole test of were positive as reported by Buxton and Fraser (1977). In Gram's staining, the morphology of the *E. coli* were pink, small rod shape, Gram negative bacilli which was supported by several authors (Buxton and Fraser. 1977). Biochemical reactions are used foridentification and confirmation of bacteria to species level. All Enterobacteriaceae are oxidase negative exceptPleisomonas shigelloides. Escherichia species are positive for indole. It ferments dextrose (D-glucose) by producing mixed acids (e.g. lactic, acetic and formic acids) that can then be made visible with the addition of an indicator sensitive to pH change as phenol red or methyl red (Koneman et al., 2005).

CONCLUSION

The results of the recapitulation show that from 32 samples tested 27 positive samples of Escherichia coli with biochemical test results such as previous studies

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