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Phyllanthusniruri* Linn Extract As Antibiotic Growth Promoter (AGP) in Layer Chicken Infected by *Escherichia coli

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Abstract

The effectiveness of *Phyllanthusniruri* Linn (Pn Linn) extract as AGP in layer chicken performance infected by *Escherichia coli* was conducted. The research was done with 25 experimental units of five treatments. T1= without *Escherichia coli* and *Phyllanthusniruri* Linn, T2,T3,T4,T5 =*Escherichia coli* infected which were added with AGP 1%, 20% Pn Linn, 25% Pn Linn, and 30% Pn Linn. The results showed that 30% Pn Linn had highest feed consumption of 887.4 grams/head/week and highest egg production of 430.8 grams/week and the lowest feed conversion of 2.08.

Key words: PnLinn, AGP, Layer Performance, *Escherichia coli*

Improper control of *E. coli* infection often occur resistance to antibiotics used (Hidanah *et al.*, 2018). Natural feed additives such as Pn Linn can used as an alternative herbal treatment to *E. coli* (Astuti *et al.*, 2017; Gunawan *et al.*, 2008). This study aims to determine the effectiveness of Pn Linn extract as a substitute for Antibiotic Growth Promoter (AGP) on laying hens performance was infected with *E. coli*.

Materials and Methods

E. coli suspension was prepared in Phosphate Buffer Saline solution and centrifuge and added with 0.5 level Mc. Farland solution. Pn Linn Extract was prepared by macerating. 25 layers were allotted to 5 treatment group of 5 hens each. The laying were infected by *E. coli*. The T1 group was used as negative control, T2 was used as positive control with AGP with in Pn Linn extract, The T3, T4 and T5 were given 20, 25, 30% Pn Linn extract. The production

performance of birds in the treatment group were recorded. The data on feed consumption, feed conversion, egg production were recorded. A complete randomized was followed.

Results and Discussion

The data on feed consumption, feed conversion ratio, egg production and hen day were collected and analysed. The data can be seen in Table I

Feed consumption, the average value of feed consumption ranges from 830 - 887 grams/hen/ week which falls within the average feed consumption per hen at 100-120 g/day (Nurcholis *et al.*, 2009). The PnLinn extract can replace the use of AGP, which contains alkaloids, saponins, flavonoids, and tannins which can inhibit pathogenic bacteria in the intestine so that it can improve their performance and can increase the digestibility of food substances.

Increased egg production is also influenced by the terpenoids which acts as antibacterial agent inhibiting *E. coli* (Ragland *et al.*, 2014). According to Sharififar *et al.* (2009) the PnLinn extract also act as an antioxidant and enhances immunomodulations. The content of flavonoids in Pn Linn extract not only inhibited the *E. coli* and but also enhanced the egg production, lowered feed consumption and increased the production of hen day production in the laying hens (Abbas, 2010).

The conclusion, addition of Pn Linn extract as a substitute for Antibiotic Growth Promoter (AGP) layer chickens infected by *E. coli* at 30% of Pn Linn extract.

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Table I. Feed Consumption, Egg Production, Feed conversion & Hen Day Egg Production Layers Prepared Use as Substitute for AGP & Infected with *E. coli*

Treatment	Feed Consumption (grams/hen/week)	Egg Production (grams/hen/week)	Feed Conversion (consumption / egg production)	Hen Day (%)
T1	854.6 ^{ab} ± 47.5	383.6 ^b ± 15.22	2.2324 ^a ± 0.18	91 ^b ± 8.21
T2	862.0 ^{ab} ± 51.7	337.6 ^b ± 35.98	2.569 ^a ± 0.22	85 ^b ± 0.00
T3	858.40 ^{ab} ± 33.76	402.61 ^b ± 23.9	2.1397 ^a ± 0.17	94 ^b ± 8.21
T4	871.20 ^{ab} ± 38.5	410 ^b ± 12.4	2.1274 ^a ± 0.13	95 ^b ± 7.07
T5	887.40 ^b ± 25.3	430.8 ^b ± 45.8	2.0840 ^a ± 0.28	90 ^b ± 9.35

Means denote different superscripts in the same column are significantly different ($p < 0.05$)

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