The Effect of Different Methods of Giving Probiotic Lactobacillus salivarius I-11 on Broilers Performance in Starter Period

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PROCEEDING OF 10th ASIAN CONFERENCE OF LACTIC ACID BACTERIA

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Preface

The Asian Conference for Lactic Acid Bacteria (ACLAB) is a biennale event which is one of the activities facilitated by the Asian Federation of Societies for Lactic Acid Bacteria (AFSLAB). Each of the member countries of AFSLAB takes a turn to host this event. In 2019, it's a great pleasure for the Indonesian Society for Lactic Acid Bacteria and Gut Microbiota (ISLAB-GM) to host the 10th Asian Conference on Lactic Acid Bacteria (ACLAB-10).

It is the aim of this conference to gather the advanced research information and application technologies of Lactic Acid Bacteria, Gut Microbiota, and Probiotic. The conference would serve as a platform for researchers from academia and industry in Asia to obtain and exchange information on scientific progress and applications. The countries that participating at ACLAB-10 are Bangladesh, Bulgaria, Cambodia, China, German, Philipines, India, Indonesia, Iran, Japan, Malaysia, Mexico, Mongolia, Singapore, South Korea, Taiwan, and Thailand.

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The Effect of Different Methods of Giving Probiotic *Lactobacillus salivarius* I-11 on Broilers Performance in Starter Period

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Abstract

The aim of the research was to study the effect of different methods of giving probiotics *Lactobacillus salivarius I-11* on broilers' performance in the starter period. A total of 200 days old chick were reared until 14 days of age. The research was used a completely randomized design with four treatments and five replications. The treatments were T0 = Control with no probiotics, T1 = Probiotics with Force-feeding, T2 = Probiotics in Feed, T3 = Probiotics in drinking Water. The parameters were broilers performance (feed conversion ratio /FCR, bodyweight gain/ BWG and feed consumption / FC,) in the starter period with different methods of giving probiotics. The data were analyzed by ANOVA and DMRT tests. The Result showed that The FCR of (T1, T2 dan T3) were lower ($p < 0.05$) but the BWG of broilers were higher ($p < 0.05$) compared to control treatment. There are no significant results on the FC of T0 with T1, T2 and T3. The conclusion was the Broilers in starter period without given probiotics showed the worse performance compared to broilers with probiotics *Lactobacillus salivarius I-11*.

Keywords

force-feeding, probiotics, *lactobacillus salivarius I-11*., broilers, performance

1 Introduction

Increasing broilers production can be achieved by giving feed additives in the form of probiotics to replace antibiotics. *Lactobacillus sp* is a species of lactic acid bacteria probiotic that have useful effects on poultry health. *Lactobacillus* can be reduced colonization of pathogenic bacteria and support host performance [1,2]. Probiotics supplementation can improve the feed conversion ratio of chicken [3]. In poultry production, probiotics do not leave residues in the animal products, improve nutrient utilization and increase productivity [4]. There are some methods for giving probiotics that are force-feeding, giving in the feed and drinking water. The aim of the research was to study the effect of different methods of giving probiotics *Lactobacillus salivarius I-11* on broilers performance in the starter period.

2 Materials and Methods

The research was done on, Animal and Agricultural Sciences Faculty, Laboratory Feed Technology Diponegoro University. Two hundred day old chick (DOC) strain Cobb unsex, isolate *Lactobacillus salivarius I-11*. and complete feed. The complete feed contains crude protein 20 % and Metabolism energy 3000 MJ/Kg.

Two hundred broilers divided into 4 groups with 4 treatments, 5 replications and 10 units. Maintenance of broilers started with disinfection and fumigation cage space. For one day, DOC was given sugar water. In group T1, *Lactobacillus* Sp was given by 1 ml each day of 10^9 cfu/ml. One group of DOC (T2) was given by 2 % *Lactobacillus* Sp on feed and T3 Groups were given by 2 % *Lactobacillus* Sp on drinking water. Maintenance of broilers for 15 days.

The research used a completely randomized design with four treatments and five replications. The treatments were T0 = Control with no probiotics, T1 = Probiotics with Force-feeding, T2 = Probiotics in

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Feed, T3 = Probiotics in drinking Water. The parameters were broilers performance (feed conversion ratio /FCR, body weight gain/ BWG and feed consumption / FC. The data were analyzed by ANOVA (analyzed variance) and DMRT (Duncan's Multiple Range Tests performed) to know the difference between treatments [5].

3 Results And Discussion

The effect of different methods of giving probiotics *Lactobacillus Sp.* on broilers performance in the starter period showed in **Table 1**.

Table 1 Average of WG, FC and FCR Broilers in starter period with different methods of giving probiotics Lactobacillus salivarius I-11

Treatments	WG (g/chicken/ week)	FC (g/chicken/ week)	FCR
Control	345.53±3.1 [b]	465.52±3.2	1.35±3.4 [b]
Force feeding	362.81±3.1 [a]	464.56±3.2	1.28±3.4 [a]
Probiotics in feed	364.41±3.1 [a]	464.21±3.2	1.27±3.4 [a]
Probiotics in drinking water	363.22±3.1 [a]	464.33±3.2	1.28±3.4 [a]

Note: Different superscripts showed significant ($p<0.05$) differences among treatmens

The ANOVA showed that *Lactobacillus salivarius I-11.* as probiotics by force-feeding, in feed and drinking water affects the BWG broilers were significantly ($p<0.05$) increased but FC were significantly ($p<0.05$) decreased. The results are agreement with the findings of Mohejad et al. who reported refinement in body weight gain by Probiotics [6]. The probiotics stimulate the immunity of the chickens in two ways (a) antigen release by the dead organisms are absorbed and thus stimulate the immune system or (b) probiotic migrate throughout the gut wall and multiply to a limited extent [7]. It is believed that there is some relationship between the immune system with the performance [8]. There is no significantly different effect of control treatments (without probiotics) and broilers with probiotics caused by the same quality feed. Some studies show that probiotics in feed no effect on feed consumption [9,10].

4. Conclusion

The conclusion was the Broilers in starter period without given probiotics showed the worse performance compared to broilers with probiotics *Lactobacillus salivarius I-11.*

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