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The Performances of Male Local Sheep Fed with Different Level of Expired Bread

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Abstract. The objectives of the study were to determine male local sheep performances fed with different level of expired bread. Twelve male local sheep with body weight $21,54 \pm 1,93$ kg (CV= 8,82%) were used in this study and divided into 4 feed treatments and 3 replications. The design of this study is a Completely Randomized Design (CRD). The first treatment P0 was a control, sheep fed with 100% basal concentrates. The second treatment P1, sheep fed with 95% basal concentrates plus 5% expired bread. The third treatment P2, sheep fed with 90% basal concentrates plus 10% expired bread. And the last treatment P3, sheep fed with 85% basal concentrates plus 15% expired bread. Data collected were dry matter intake (g/day), body weight gain (g/day), feed conversion ratio (FCR) and Feed cost per gain (Rp/kg). The result showed that feed treatments didn't significantly affect dry matter intake, body weight gain, FCR and IOFC. The average of dry matter intake of treatment P0, P1, P2 and P3 respectively was 1120,76; 1097,22; 1167,11 and 1132,73 g/day. The average of body weight gain of treatment P0, P1, P2 and P3 respectively was 371,30; 335,56; 363,33 and 306,67 g/day. The average of FCR of treatment P0, P1, P2 and P3 respectively was 3,09; 3,23; 3,43; and 3,33. The average of feed cost per gain of treatment P0, P1, P2 and P3 respectively was Rp. 11.483/kg; Rp. 12.156/kg; Rp. 11.588/kg and Rp. 12.502/kg. In conclusion, the use of expired bread to the level of 15% doesn't significantly affect DMI, ADG and FCR. Feed cost per Gain is obtained from IDR 11.483 to IDR 12.502.

Keywords: *expired bread, performances, male local sheep.*

1. Introduction

The price of livestock feed which continues to soar increase due to the still high dependence on imported feed ingredients. Farmers are also considered to be unable to buy food with quality nutrients that are suitable for livestock needs, because the quality of feed nutrients is synonymous with high feed prices. Feed holds the highest percentage ($\pm 70\%$) of total maintenance cost, this is what triggers some farmers to try to reduce feed cost to a minimum. One of these efforts is to utilize waste based feed ingredients that are of course still high quality is expired bread. The availability of the expired bread is clearly continuous and doesn't depend on the season. This expired bread is a food product for humans but has exceeded the expiration limit so it must be withdrawn from the market, and this makes the opportunity for farmers to utilize the expired bread as livestock feed. [1]

The expired bread is containing nutrients 90,15% Dry Matter (DM); 14,84% Cude Protein (CP); 1,00% Crude Fiber (CF); 5,67% Ether Extract (EE); and 2,42% ash (BPMSP, 2018). But, the expired bread contains mycotoxins (secondary metabolites produced by certain fungi). Winarti [2] states that the use expired bread as a substitute for rice bran and cassava meal up to level 30% doesn't affect feed intake and milk production of dairy cows. One type of mycotoxins is aflatoxin. Aflatoxin



(*Aspergillus flavus* toxin) is a disease caused by toxins produced by fungi. This aflatoxin contaminates feed ingredients such as corn, cotton seed flour, beans, wheat flour, soybeans and sorghum seeds. [3]

The problem of the livestock industry in Indonesia today, in addition to reducing production costs to the maximum extent possible with maximum productivity, it's also faces with changes in the mind-set customers who have begun to pay attention to the quality of products such as low fat, residues of drugs that are low, pathogenic microbes contamination that are low and safe for consumption. Prevention of aflatoxin can be done using a feed additive which is mixed into the feed so that it will be active against mycotoxins. According to Hussein and Brassel [4] that aflatoxin affects livestock production negatively on the function of the immune system and rumen metabolism. Some feed additives that are known to have the ability the absorb mycotoxins are activated carbon, zeolite and bentonite. According to Stroud [5] that the use of aluminosilicate, zeolite, bentonite, and phyllosilicate can reduce carcass aflatoxin concentration from 40,39 to 34,98%. Decrease in the aflatoxin concentration without affecting dry matter intake and meat production. Application of zeolite as feed additive can function as binder ammonium so that it can be used by microbes to synthesize proteins and increase Nitrogen efficiency value, thus growth and livestock production also increased. Rahmawati [6] also stated that zeolite use of 0.5 and 1.0% in feed provides the effectiveness of binding to aflatoxin.

2. Materials and Method

2.1 Materials

Twelve local male sheep were used in this study had body weight $21,54 \pm 1,94$ kg (CV= 8,82%) and homogeneous age.

2.2 Feed

The feed used in this study was a complete concentrate consisting of Pollard, corn flour, coffee peel, green peanut peel, soybean meal, copra meal, premix, salt, expired bread, and zeolite. The feed nutrient content of complete concentrate and expired bread can be seen in Table 1.

Table 1. The feed nutrient content of complete concentrate and expired bread

Type of feed	DM	Ash	CP)	EE	CF	Calcium (Ca)	Phosphor (P)	Aflatoxin
	----- % -----				-----		-----	
								µg/kg
Complete concentrate	88,46	6,74	11,12	1,49	14,93	0,63	0,22	13,55
Expired bread	90,15	2,42	14,84	5,67	1,00	0,16	0,07	13,17
P0	88,46	6,74	11,12	1,49	14,93	0,63	0,22	13,55
P1	88,54	6,52	11,31	1,70	14,23	0,61	0,21	13,53
P2	88,63	6,31	11,49	1,91	13,54	0,58	0,21	13,51
P3	88,71	5,97	10,94	1,83	12,79	0,55	0,19	12,83

2.3 Experimental Design

Twelve local male sheep used were divided into 4 feed treatments and 3 replications. The first treatment P0 was a control, sheep fed with 100% basal concentrates. The second treatment P1, sheep fed with 95% basal concentrates plus 5% expired bread. The third treatment P2, sheep fed with 90% basal concentrates plus 10% expired bread. And the last treatment P3, sheep fed with 85% basal

concentrates plus 15% expired bread. Each treatment was given zeolite by 2%. The male local sheep that have been selected are then adapted for a week and then given treatment for 3 months.

2.4 Data Collection

- Dry matter intake / DMI (g/day)
Calculate the amount of feed intake first, Feed intake was the amount of feed given every day minus the remainder the next day. The amount of feed intake that has been obtained then converted into DMI calculation by the formula:
$$\text{DMI} = (\text{feeding} \times \% \text{DM}) - (\text{remainder feed} \times \% \text{DM});$$
 - Average Daily Gain (g/day)
Measurement was done by weighing male local sheep before and after the feed treatments, and then divide by the length of time the feed treatments
 - Feed Conversion Ratio (FCR)
Measurement was done by calculating the amount of feed intake (g), divided by the body weight produced (g)
 - Feed Cost per Gain (Rp/kg).
Measurement was done by comparing the cost of feed issued with the selling price per unit male local sheep (live weight).
3. Statistical Analysis
DMI, Body Weight Gain and FCR data were analyzed using one-way ANOVA of Completely Randomized Design (CRD). Feed Cost per Gain data was analyzed using descriptive analysis.

3. Results and Discussion

Table 2 shows that the DMI between P0, P1, P2, and P3 treatments is not significant ($P > 0.05$). This is because up to the level of 15% the use of expired bread as a component in the basal concentrate gives the same palatability, then the content of nutrients between P0, P1, P2 dan P3 treatments are almost the same.

Table 2. The average of dry matter intake, average daily gain, FCR and feed cost per gain in P0, P1, P2, and P3 treatments

Measurements	Treatments			
	P0	P1	P2	P3
DMI (g/day)	1.120	1.097	1.167	1.133
Average Daily Gain (g/day)	371	336	363	307
FCR	3.09	3.27	3.43	3.33
Feed cost per gain (IDR/kg)	11.483	12.156	11.588	12.502

Expire bread use to level 15% gives the same effect as control feed so that it can be interpreted that the use of expired bread up to level 15% as concentrate material doesn't affect the dry matter intake of male local sheep. This is in accordance with the opinion Winarti [7] that the use of expired bread as a substitute rice bran and cassava meal up to the level 30% showed didn't affect on DMI and dairy cow milk production.

Table 2 shows that the average daily gain between P0, P1, P2, and P3 treatments is not significant ($P > 0.05$). This is due to the use of expired bread to the level of 15% has the same level of DMI so that the nutrients absorbed for the formation of meat are also the same.

Table 2 shows that the value of FCR between P0, P1, P2, and P3 treatments is not significant ($P > 0.05$). This is due to the use of expired bread to the level of 15% has the same quantity of DMI and level of DMI ability, so that the nutrients absorbed for the formation of each kilogram of meat are the same. The lower of FCR value than the more efficient use of feed.

This is in accordance with the opinion Gaol *et al.* [8] that the use of expired bread up to the level of 30% as Quails feed showed non-significant ($P>0.05$) in DMI, average daily gain, and FCR. No clinical signs associated with Quail's performance. Hetherington and Krebs [9] said that the use of bakery waste up to the level of 50% as sheep feed showed non-significant ($P>0.05$) in the average daily gain and FCR. The use of bakery waste isn't found clinical symptoms that are related to digestive disorders. According to Hidayatullah *et al.* [10] that the use of expired bread up to the level of 60% in Hybrid duck feed as a substitute for corn shows a non-significant in the average daily gain and the FCR.

Table 2 shows that feed cost per gain between P0, P1, P2, and P3 treatments ranges from IDR 11.483 to IDR 12.502. Feed cost per increase indicates the amount of cost (IDR) to get 1 kilogram of body weight. The lower of the feed cost per increase so the greater profits are obtained.

4. Conclusion

In conclusion, the use of expired bread to the level of 15% doesn't significantly affect DMI, ADG, and FCR. Feed cost per Gain obtained was rom IDR 11.483 to IDR 12.502.

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