

Blood Figure of Rambon Cattle Fed Formulated Concentrate Containing Soybean Cake, Pollard and Corn Oil Combine with Urea Xylanase Molasses Candy

¹ Emy, K., ² Romziah, S., ³ Tri Bhawono, D.

¹ Academic Staff in Animal Husbandry Department, Faculty of Veterinary Medicine, Airlangga University

² Professor in Animal Husbandry Department, Faculty of Veterinary Medicine, Airlangga University

³ Academic Staff in Clinical Department, Faculty of Veterinary Medicine, Airlangga University
email: emykoestanti@yahoo.com

Abstract-The hemoglobin, leucocyte, and thrombocyte of blood serum figure of male Rambon cattle received silage only were not significantly ($p > 0.05$) different when compared to Rambon cattle fed silage and supplemented with formulated concentrate which were containing soybean cake, pollard and corn oil combine with Urea Xylanase Molasses Candy. However, account number of erythrocyte and hematocrit value were higher ($p < 0.05$) in the group male Rambon Cattle fed silage with formulated concentrate containing soybean cake, pollard, and corn oil. It was concluded that formulated concentrate containing soybean cake, pollard and corn oil when combined with Urea Xylanase Molasses Candy (UXMC) could maintain the serum blood figure of male Rambon cattle in the normal ranges (Hb: 8.7-9.3 g/dl, Leucocyte: 7.87-10.97x 10⁹/L, Erythrocyte: 3.83-4.96 x10¹²/L, Thrombocyte: 543.00-632.00 x10⁹/L, Hematocrit: 15.07-23.93%).

Key words-soybean cake, pollard, corn oil, UXMC, blood figure.

INTRODUCTION

Providing a good quality and balance quantity of feed for beef cattle farming is the important factors to achieve high production of meat. Nutrition and health status of beef cattle can be assessment by hematology diagnosis [1]. Many factors can affect the blood hematology condition of beef cattle, such as: beef cattle breed, genetic characteristic, physiological function, environment, nutrition, diseases, and farming management [2]. Hematology examination include analyzed the morphology and physiology of blood. Hematology determination include: measurement of account hematocrit (percentage of red blood cells in a standard volume of blood), hemoglobin (the red cells of their color which is carries oxygen from the lungs to the cells, erythrocyte (number of red blood cells in the blood), leukocyte (number of white blood cells in blood), thrombocyte (number of platelets in blood). The hemoglobin test used to determine the presence of anemia and or polycythaemia, while hematocrit test used to observe whether any correlation between hemoglobin and red blood cells count, and to determine the type of anemia. Low count of red blood cells shows any anemia with excess of body fluid and blood loss. If high count of erythrocyte, it caused by dehydration and polycythemia. Leukocyte or white blood cells responsible to protect infection and allergies. Function of platelets/thrombocyte responsible of blood clot at the side of wound. Extremely low thrombocyte account indicated any spontaneous bleeding. In the research will observe the blood figure of male Rambon beef cattle that receiving silage, and supplemented with formulated concentrate containing soybean cake, pollard, and corn oil combining with urea xylanase molasses candy (UXMC) as a standard values of native beef cattle and safely of animal feeds.

MATERIAL AND METHODS

The experiment was conducted in Probolinggo district during two months. A total of nine male Rambon cattle were used as an experimental animal, with average body weight around 160 kg and the average of their age about two years old. The experimental animals were divided into three group treatments (P0, P1 and P2), therefore each group consisted three animals as replications. Three variations of ration diet, such as: P0 as a control treatment only silage in ration diet, P1: the ration diet include silage +1 kg formulated concentrate which is composed with soybean cake, pollard and corn oil; P2 ration diet include silage + 1 kg formulated concentrate + 100 g urea xylanase molasses candy. The experiment was tailored into Complete Randomized Design (3 x 3 replications). One week adaptation to the environment and ration diet treatment as well as treatment group. Data of feed consumptions were record every day, and the blood samples were collected at the end of experiment.

Whole red blood sample were determined into many parameters, such as: Percentage of Hematocrit, Hemoglobin level, Erythrocyte account, Leukocyte account, Thrombocyte account,

The data collections were analyzed by using Analysis of Varian (ANOVA) and Duncan's Multiple Test method and SPSS series 13.0 computer soft were.

RESULTS

Table 1. Blood Figure of Male Rambon Beef Cattle Based on Treatment Group

Hematology Parameter	Treatment Group		
	P0	P1	P2
Hematocrit, %	15.07 ^B	23.93 ^A	15.57 ^B
Hemoglobin, g/dl	8.70	9.63	8.70
Erythrocyte, x 10 ¹² /l	3.38 ^b	4.82 ^a	3.28 ^b
Leukocyte, x 10 ⁹ /l	10.87	7.97	8.87
Thrombocyte, x 10 ⁹ /l	543	632	562

^{A, B} different supnceerscript at the same row were significantly ($p < 0.05$) difference.

Table 1 showed the figure of hematology of whole red blood male Rambon of cattle among treatments group. Percentage of hematocrit was higher ($p < 0.05$) in group P1 that beef cattle received silage and formulated concentrate containing soybean cake, pollard and corn oil. However, percentage of hematocrit of male Rambon beef cattle on group treatment P1 and P2 were not significant ($p > 0.05$) different. The percentage of hematocrit in these group range about 15.07 to 23.93 %. Level of hemoglobin among treatment groups range about 8.7 to 9.63 g/dl, and it were no significant ($p > 0.05$) difference. Erythrocyte account was higher ($p < 0.05$) in male Rambon cattle group P1, it was 4.82 x 10¹²/l, and the erythrocyte account were different significantly ($p < 0.05$) compared to P0 and P2 beef cattle groups. No significant ($p > 0.05$) different of erythrocyte account on male Rambon beef cattle who received silage only (P0) and the group received silage + formulated concentrate containing soybean cake, pollard and corn oil with urea xylanase molasses candy (P2). The erythrocyte account were 3.38, 4.82 and 3.28 x 10¹²/l on P0, P1 and P2 groups, respectively. Results on leucocyte account showed no significant ($p < 0.05$) among P1, P2 and P3, and it were 10.87, 7.97, 8.87 10⁹/l, respectively. Thrombocyte account in P0, P1 and P2 were 543, 632 and 562 10⁹/l, respectively, and there were no significant ($p > 0.05$) different among treatment group. Figure 1 and figure 2 shows the blood hematology figure among treatments groups.

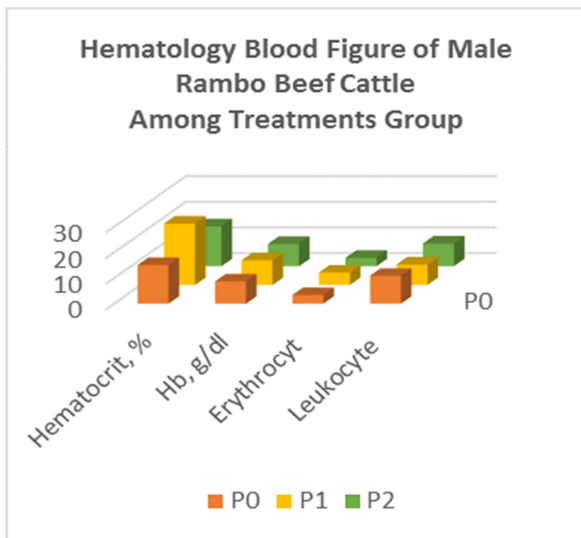


Figure 1. The Hematology Figure of Male Rambon Cattle Based on Treatments Group.

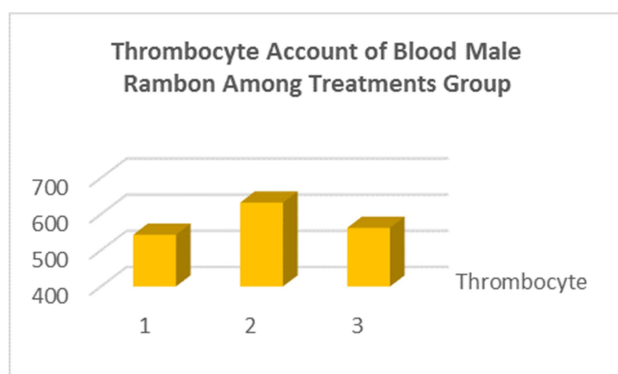


Figure 2. The Thrombocyte Account in Blood Male of Rambon Cattle.

DISCUSSION

According to the data that reported by earlier researcher [3], the range of hematocrite of bovine animals range about 21 to 30 %, hemoglobin level range about 8.4 – 12 g/dl. erythrocyte account range about 4.9 to 7.50×10^{12} g/l, leukocyte account range about 5.1 to 13.3×10^9 g/l, thrombocyte account range about 160 to 650×10^9 g/l. The hematology blood figure in the experiment on native male Rambon beef cattle mostly showed in the normal ranged, except the percentage of hematocrite and erythrocyte account in P0 and P2 rather lower in group P0 and P2 compared to the data reported by earlier researcher found it. In this case indicate any anaemia condition in these male Rambon beef cattle or in

the normal range as a standard of hematology figure of Rambon native cattle. So it can be say the experiment can be promote as a preliminary research about hematology figure of male Rambon native cattle in Indonesia, because no information before. Commonly, any correlation between hematocrite percentage and erythrocyte account. Whenever male Rambon beef cattle received supplementation of concentrate formulated which was containing soybean cake, pollard and corn oil, the percentage of hematocrit, and erythrocyte account were increase significantly. It means the available ration diet may increase the metabolite products for it utilization for blood cell synthecys to maintain the healthier male Rambon beef cattle. Number of leukocyte ang thrombocyte account in the experiment were in the normal range, and it be supported the immune system and capability of the male Rambon beef cattle to protect some infectious disease and incase any bleeding, it can be managed by normal account of thrombocyte.

CONCLUSION

Silage alone and or combination with formulated concentrate containing soybean cake, pollard and corn oil, and supplemented again with urea xylanase molasses candy given to Rambon beef cattle, it could be maintained the blood hematology figure on male native Rambon beef cattle in Indonesia.

ACKNOWLEDGMENT

On behalf of the researcher team, the author would like to say thank you to Rector Airlangga University for accepted the research grand. The researchers team also to say thank you to PT. Indo Berkah for the kindly to facilitate the Rambon beef cattle and animal housing during the research running.

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