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- **Abstract**
Blood chemistry profile of Bali cattle fed silage rice straw and biosupplement of selected rumen and termites lignocellulolytic bacteria consortium


Faculty of Animal Husbandry Udayana University, Denpasar, Indonesia

Received: 10 September 2017; Revised: 22 September 2017; Accepted: 28 September 2017

Abstract: The study aimed to determine blood chemistry profile of Bali cattle fed rice straw and biosupplement fermented by selected (superior) rumen and termites lignocellulolytic bacteria inoculant has been carried out in the Simantri Farmers Group “Winangun Kertih” Banjarangkan Village, Klungkung District, Bali Province. Twelve bali cattle were used in this experiment with Randomized Block Designed four treatments and three blocks. The first treatment was bali cattle fed biosupplement without fermented inoculant bacteria consortium (SB0), while the other three treatments were fed biosupplements fermented by selected 1 (BR23T14), selected 2 (BR24T13), and selected 3 (BR34T12) lignocellulolytic bacteria inoculant. Basal feed for all bali cattle was rice straw fermented by the best inoculant formula of lignocellulolytic bacteria inoculant coded BR23T14. The results showed that fed biosupplements fermented selected 1 and 2 inoculant formula of lignocellulolytic bacteria consortium (treatments SB1 and SB2) increased 29.80% and 21.38%; 52.09% and 36.08% respectively for totally cholesterol and High Density Lipoprotein/HDL blood concentration of bali cattle compared with SB0. The blood glucose of bali cattle significantly increased by 26.11% on treatment SB1, whereas given SB2 and SB3 were not significant different compared with SB0. Meanwhile in variable blood urea, triglycerides, and Low Density Lipoprotein/LDL, all treatments were not significant different (P>0.05). It was concluded that given biosupplement fermented selected inoculant formula of lignocellulolytic bacteria consortium of bali cattle rumen and termites can increasing blood glucose, totally cholesterol and HDL concentration of bali cattle.
INTRODUCTION

Optimise the nutrients metabolism presented at blood chemistry profile on degrading fibrous feed such as agriculture waste is one important step in optimizing the advantages of Bali cattle as a source of the best meat in the tropics are able to utilize lower quality feedstuffs. This is important because the national policy on procurement of ruminant diets in an effort to achieve self-sufficiency in beef cattle is focused on the utilization of agricultural waste\(^1\). Blood chemistry profile such as glucose, urea and blood lipids were reflection of the supply of nutrients and nutrients metabolism of livestock in producing quality meat.

Blood glucose concentration are a reflection of the main results of carbohydrate metabolism that circulate along the blood\(^2\) and is an important energy source in the maintenance for animals\(^3\). Harper\(^4\) states that the range of normal glucose levels in ruminant range 70-120 mg/dl. Levels of blood urea is a reflection of the body's blood urea cycle in ruminants and is the result of protein metabolism by rumen microbial activity against protein or non-protein nitrogen feed\(^4\). Hungate\(^6\) states that the range of normal blood urea concentration of cattle is 26.6 to 56.7 mg/dl. Wibawa et al.\(^7\) (2013) showed that the ration-based agricultural waste without fermentation would lower glucose levels by 13.58% -15.43% (53.00 mg/dl vs 61.33-62.67 mg/dl) and blood urea Bali cattle decreased 10:16% -13.17% (40.40 mg/dl vs. 44.97 - 46.53 mg/dl) compared with fermented feed. Blood lipids, especially cholesterol, triglycerides, HDL and LDL are a reflection of the supply of nutrients to livestock\(^8\). Lipid compounds circulating in the blood is a useful for the body as an energy source\(^9\).

Bali cattle have the ability to use various types of low-quality feedstuffs including agricultural waste and has responded positively to the improvement of feed by increasing the rate of body weight gain and feed utilization efficiency\(^10\). However, the utilization of agricultural waste as animal feed in need of treatment technologies, considering the rich wastes lignocellulose compounds are difficult to digest by cattle. This is supported by Mudita et al.\(^11,12\) that the use of agricultural waste as feed without the application of technology can reduce productivity and business efficiency Bali cattle and goat livestock. Fermentation and supplementation technology was allegedly able to overcome these problems. Application the selected inoculant formula of rumen and termites lignocellulolytic bacteria as starter fermentation process will be increasing quality of basal or supplement feed based on agriculture waste\(^14\).

The first research periods by Partama et al.\(^15\) showed that has selected three (3) superior bacteria consortium inoculant formula from bali cattle rumen and termites bacteria were formula coded BR\(_{23}T\(_{14}\) , BR\(_{24}T\(_{13}\) dan BR\(_{34}T\(_{12}\) having high quality and eflectivity as starter fermentation agriculture waste for animal feed. Those research showed lignocellulolytic bacteria consortium inoculant coded BR\(_{23}T\(_{14}\); BR\(_{24}T\(_{13}\) and BR\(_{34}T\(_{12}\) were third inoculant had higher contents of soluble prtein, phosphor/P, calcium/Ca, zincum/Zn, sulfur/S, amount of microbes, substrates degradation ability, and enzyme activity compared with others inoculant. That inocculant also has increase quality and in-vitro digestibility of rice straw. Based on that research use its bacteria consortium inoculant on in-vivo research for development bali cattle livestock necessary for application. The research was conducted to determine the effect of biosuplemen of rumen bacterial consortium
MATERIALS AND METHODS

Location, Animals and Experimental Design: A research has been carried out at fedlot Group of Integrated Farming System “Simantri” namely Winangun Kertih, Banjarangkan Village, Klungkung Regency used twelve (12) Bali cattle mean body weight 121.72 ± 13.01 kg. They were kept in feedlot pens (individual concrete pens) on site for duration of the study. This experiment used a Randomized Block Design with four treatments and three block as replicated. The treatment were as follows:

SB₀ = bali cattle fed biosuplement fermented without selected inoculant formula
SB₁ = bali cattle fed biosuplement fermented selected 1 (BR₂₅T₁₄) inoculant formula
SB₂ = bali cattle fed biosuplement fermented selected 2 (BR₂₃T₁₃) inoculant formula
SB₃ = bali cattle fed biosuplement fermented selected 3 (BR₃₄T₁₂) inoculant formula

Selected Lignocellulolytic Bacteria Inoculant: Bacteria inoculant utilized in this study were selected 1,2, and 3 coded BR₂₅T₁₄, BR₂₃T₁₃, and BR₃₄T₁₂ of lignocellulolytic bacteria consortium inoculant which result research of the First Year research of Partama et al.¹³ formulated by superior bacteria of bali cattle rumen and termites result research of Mudita et al.¹⁴. Bacteria consortium inoculants were produced by inoculating 1% a combination of bacterial culture (according to treatments) on the inoculant medium aseptically under anaerobic conditions. The formula of selected inoculant are presented in Table 1.

<table>
<thead>
<tr>
<th>Selected Bacteria Inoculant</th>
<th>Inoculant Medium (ml)</th>
<th>Superior Bacteria Isolates Culture from Bali Cattle Rumen (BR) (ml)</th>
<th>Superior Bacteria Isolates Culture from Termites (BT) (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR₂₅T₁₄</td>
<td>990</td>
<td>BR₁ = 9.5, BR₂ = 9.5, BR₃ = 9.5, BR₄ = 9.5</td>
<td>BT₁ = 9.5, BT₂ = 9.5, BT₃ = 9.5, BT₄ = 9.5</td>
</tr>
<tr>
<td>BR₂₃T₁₃</td>
<td>990</td>
<td>BR₁ = 9.5, BR₂ = 9.5, BR₃ = 9.5, BR₄ = 9.5</td>
<td>BT₁ = 9.5, BT₂ = 9.5, BT₃ = 9.5, BT₄ = 9.5</td>
</tr>
<tr>
<td>BR₃₄T₁₂</td>
<td>990</td>
<td>BR₁ = 9.5, BR₂ = 9.5, BR₃ = 9.5, BR₄ = 9.5</td>
<td>BT₁ = 9.5, BT₂ = 9.5, BT₃ = 9.5, BT₄ = 9.5</td>
</tr>
</tbody>
</table>

Medium inoculant is made from a combination of natural ingredients and chemical materials such as Table 2. Mixing medium using vortex for 30 minutes at 80-100°C. Medium inoculant that has been mixed homogeneously subsequently sterilized in an autoclave for 15 minutes T 121°C. After the medium inoculant begin cooling (T ± 40°C), medium ready to be used for the production inoculant. Its inoculant application for production of selected biosupplement (following treatment) and especially inoculant coded BR₂₅T₁₄ also application for fermented rice straw were basal feed for all treatments.
Tabel 2: Composition of Inoculant Medium (on 1 liter)

<table>
<thead>
<tr>
<th>No</th>
<th>Material</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thioglicollate Medium (g)</td>
<td>0.1</td>
</tr>
<tr>
<td>2</td>
<td>Sugarcane (ml)</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>Urea (g)</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Tannic Acid (g)</td>
<td>0.025</td>
</tr>
<tr>
<td>5</td>
<td>CMC (g)</td>
<td>0.025</td>
</tr>
<tr>
<td>6</td>
<td>Xylan (g)</td>
<td>0.025</td>
</tr>
<tr>
<td>7</td>
<td>Rice Straw (g)</td>
<td>0.25</td>
</tr>
<tr>
<td>8</td>
<td>Rice Brand (g)</td>
<td>0.25</td>
</tr>
<tr>
<td>9</td>
<td>Cassava</td>
<td>0.25</td>
</tr>
<tr>
<td>10</td>
<td>Multy vitamin-mineral “Pignox” (g)</td>
<td>0.15</td>
</tr>
<tr>
<td>11</td>
<td>Water</td>
<td>until volume 1 liter</td>
</tr>
</tbody>
</table>

**Biosupplement:** In this study, produced 4 biosupplements consist of 3 bacteria consortium biosplanen namely SB<sub>1</sub>, SB<sub>2</sub>, SB<sub>3</sub> (biosupplement produced by selected 1; 2; 3 of bacteria inoculant were BR<sub>23T14</sub>, BR<sub>24T13</sub>, and BR<sub>34T12</sub>) and 1 biosuplemen fermented by mollases/sugarcane solution without bacteria inoculant (1 liter molasses for 80 liter water) with coded SB<sub>0</sub>. Composition material feedstuffs of Basal biosupplement were produced all biosupplement show at Table 3.

Production of biosupplement was done by the fermentation method. The fermentation process is done by every 1 kg (DM) products supplement fermented using a inoculant solution containing 50 ml of inoculant (according to treatment), 50 ml of sugarcane and 900 ml of water (especially for SB<sub>0</sub>, the inoculant change with water). Then mixed until homogeneous and immediately put in a plastic container lid tightly and filled to the brim. Then incubated anaerobically for 1 week. Furthermore biosupplement were pelleting and oven-dried at a temperature of 39 - 42 °C until the moisture content of 20-25% of products (usually for ± 3 days). Once completed, the biosupplement ready to be used for further research activities. The nutrients content and population microbial presented at Table 4 and 5.

**Table 3:** Composition Material of Basal Biosupplement

<table>
<thead>
<tr>
<th>Material</th>
<th>Composition (% DM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rumen waste content</td>
<td>40</td>
</tr>
<tr>
<td>Sugarcane/Molases</td>
<td>5</td>
</tr>
<tr>
<td>Rice Bran</td>
<td>20</td>
</tr>
<tr>
<td>Corn bran</td>
<td>15</td>
</tr>
<tr>
<td>Coconut Meal</td>
<td>10</td>
</tr>
<tr>
<td>Tapioca Meal</td>
<td>5</td>
</tr>
<tr>
<td>Soy Bean</td>
<td>4</td>
</tr>
<tr>
<td>Salt / NaCl</td>
<td>0,5</td>
</tr>
<tr>
<td>limestone (CaCO&lt;sub&gt;3&lt;/sub&gt;)</td>
<td>0,4</td>
</tr>
<tr>
<td>Multyvitamin-minerals “Pignox&quot;</td>
<td>0,1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
</tr>
</tbody>
</table>
Table 4: Nutrients Content of Biosupplement

<table>
<thead>
<tr>
<th>Nutrients Contents</th>
<th>SB₀</th>
<th>SB₁</th>
<th>SB₂</th>
<th>SB₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Matter/DM (% fresh basis)</td>
<td>59,403</td>
<td>59,492</td>
<td>59,485</td>
<td>59,504</td>
</tr>
<tr>
<td>Organic Matter/OM (%)</td>
<td>85,778</td>
<td>88,506</td>
<td>88,346</td>
<td>88,678</td>
</tr>
<tr>
<td>Crude Fibre/CF (%)</td>
<td>14,789</td>
<td>10,971</td>
<td>11,265</td>
<td>11,580</td>
</tr>
<tr>
<td>Crude Protein/CP (%)</td>
<td>11,807</td>
<td>14,234</td>
<td>14,084</td>
<td>13,990</td>
</tr>
</tbody>
</table>

Notes: Analysis by Laboratory of Animal Feed and Nutrition, Faculty of Animal Husbandry, Udayana University.

Table 5: Microbial Population of Biosupplement

<table>
<thead>
<tr>
<th>Microbes</th>
<th>SB₀</th>
<th>SB₁</th>
<th>SB₂</th>
<th>SB₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totally of Bacteria (x 10⁷ CFU/g)</td>
<td>0,43</td>
<td>19,40</td>
<td>19,27</td>
<td>18,73</td>
</tr>
<tr>
<td>Lignocellulolytic Bacteria (x 10⁷ CFU/g)</td>
<td>0,28</td>
<td>10,53</td>
<td>10,53</td>
<td>9,53</td>
</tr>
<tr>
<td>Lactic Acid Bacteria (x 10⁷ CFU/g)</td>
<td>0,16</td>
<td>21,47</td>
<td>21,07</td>
<td>20,93</td>
</tr>
<tr>
<td>Totally of Fungi (x 10⁵ CFU/g)</td>
<td>0,73</td>
<td>7,87</td>
<td>7,80</td>
<td>7,60</td>
</tr>
<tr>
<td>Cellulolitic Fungi (x 10⁵ CFU/g)</td>
<td>0,53</td>
<td>5,33</td>
<td>5,20</td>
<td>5,20</td>
</tr>
</tbody>
</table>

Notes: Analysis by Laboratory of Animal Feed and Nutrition, Faculty of Animal Husbandry, Udayana University.

Basal Feed: The basal feed used in this study for all bali cattle animal research was rice straw fermented by selected 1 of lignocellulolytic bacteria inoculant (BR₂₃ T₁₄). The fermentation process is done by every 100 kg (DM) rice straw fermented using 80 liter inoculant solution containing 1 liter of inoculant (BR₂₃ T₁₄), 1 liter of sugarcane and 78 liter of water and incubated anaerobically for 1 week. Basal feed provided ad libitum. Nutrients content and metabolic product of basal feed show at Table 6.

Table 6: Nutrients Content of Basal Feed of Rice Straw Fermented BR₂₃ T₁₄

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Matter/DM (% fresh basis)</td>
<td>21,514</td>
</tr>
<tr>
<td>Organic Matter/OM (%)</td>
<td>80,0708</td>
</tr>
<tr>
<td>Crude Fiber/CF (%)</td>
<td>26,7500</td>
</tr>
<tr>
<td>Crude Protein/CP (%)</td>
<td>7,8800</td>
</tr>
<tr>
<td>Acidity/pH</td>
<td>4,1700</td>
</tr>
<tr>
<td>N-NH₃ (mmol)</td>
<td>8,7967</td>
</tr>
<tr>
<td>Totally VFA (mmol)</td>
<td>108,9668</td>
</tr>
</tbody>
</table>

Variables Observations: The parameters observed in this study consists of the blood glucose, blood uric acid, totally cholesterol, triglycerides, High Density Lipoprotein/HDL and Low Density Lipoprotein/LDL blood
Data Analysis: Data were analyzed by analysis of variance/anova, if there are significant differences \( (P \leq 0.05) \), followed by the analysis of Honestly Significant Difference test (HSD-test) \(^{15}\).

RESULTS AND DISCUSSION

The results showed that administration of biosupplement 1 (SB\(_1\)/biosupplement fermented by BR\(_{23}\)T\(_{14}\)), biosupplement 2 (SB\(_2\)/biosupplement fermented by BR\(_{24}\)T\(_{13}\)), biosupplement 3 (SB\(_3\)/biosupplement fermented by BR\(_{34}\)T\(_{12}\)) in Bali cattle fed basal rice straw fermented has increase the profile of the blood chemistry of Bali cattle, especially glucose, total cholesterol and HDL blood, while on variable of blood urea, blood triglycerides and LDL giving selected biosupplement no significantly (Table 7).

Table 7: Blood chemistry profiles of Bali cattle fed rice straw fermented and biosupplement research

<table>
<thead>
<tr>
<th>No</th>
<th>Variables</th>
<th>Treatments(^1)</th>
<th>SEM(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SB(_0)</td>
<td>SB(_1)</td>
</tr>
<tr>
<td>1</td>
<td>Blood Glucose (mg/dl)</td>
<td>79.58a(^2)</td>
<td>100.36b</td>
</tr>
<tr>
<td>2</td>
<td>Blood Urea (mg/dL)</td>
<td>49.98a</td>
<td>56.90a</td>
</tr>
<tr>
<td>3</td>
<td>Blood Total cholesterol (mg/dl)</td>
<td>141.15a</td>
<td>183.21b</td>
</tr>
<tr>
<td>4</td>
<td>Blood Triglycerides (mg/dl)</td>
<td>27.01a</td>
<td>41.79a</td>
</tr>
<tr>
<td>5</td>
<td>HDL (mg/dl)</td>
<td>105.38a</td>
<td>160.28c</td>
</tr>
<tr>
<td>6</td>
<td>LDL (mg/dl)</td>
<td>30.37a</td>
<td>14.58a</td>
</tr>
</tbody>
</table>

Note: \(^{1}\) The Treatmen SB\(_0\)= bali cattle was given rice straw fermented and biosupplement without lignocellulolytic bacteria consortium,SB\(_1\)= bali cattle was given rice straw fermented and biosupplement selected 1 (SBR\(_{23}\)T\(_{14}\)), SB\(_2\)= bali cattle was given rice straw fermented and biosupplement selected 2 (SBR\(_{24}\)T\(_{13}\)), SB\(_3\)= bali cattle was given rice straw fermented and biosupplement selected 3 (SBR\(_{34}\)T\(_{12}\)). \(^{2}\) The same letter in same row is not significantly difference \( (P>0.05) \), \(^{3}\) SEM = Standard Error of the Treatment Means.

Blood glucose concentrations are a reflection of the energy supply for the cattle especially on the given selected 1 biosupplement (SB\(_1\)) able to significantly increase 26.11% of blood glucose concentration compared with bali cattle given biosupplement control (SB\(_0\) = biosupplement without selected bacteria inoculant) with the blood glucose concentration 79.58 mg/dl, but no significant with treatment SB\(_2\) and SB\(_3\) (Table 7). In general the provision of all treatments resulted in blood glucose concentration within the normal range\(^4\) of 70-120 mg/dl.

Resulting in blood glucose concentrations were higher in bali cattle given selected biosupplement bacteria consortium bali from bali cattle rumen and termites show high bacteria consortium role in supplying nutrients to livestock in response to the high quality of nutrients produced by the administration of elected biosupplement so showed on Table 4 and 5. High of glucose blood concentration by SB\(_1\) so as respons increasing nutrients consumption and efficiency (lower feed consumption ration/FCR) from bali cattle given selected biosupplement as showed on Table 8 \(^{16}\).
Tabel 8: Performance of bali cattle given basal feed with biosupplements research

<table>
<thead>
<tr>
<th>Variables</th>
<th>Treatments</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Body Weight Gain (kg/d)</td>
<td>SB0 0.49a</td>
<td>SB1 0.66b</td>
</tr>
<tr>
<td>Rice Straw Fermented DM Consumption (kg/d)</td>
<td>SB0 2.08a</td>
<td>SB1 2.39b</td>
</tr>
<tr>
<td>Biosupplement DM Consumption (kg/d)</td>
<td>SB0 1.39a</td>
<td>SB1 1.48a</td>
</tr>
<tr>
<td>Totally Feed DM Consumption (kg/d)</td>
<td>SB0 3.47a</td>
<td>SB1 3.88a</td>
</tr>
<tr>
<td>Rice Straw Fermented OM Consumption (kg/d)</td>
<td>SB0 1.67a</td>
<td>SB1 1.92b</td>
</tr>
<tr>
<td>Biosupplement OM Consumption (kg/d)</td>
<td>SB0 1.19a</td>
<td>SB1 1.31a</td>
</tr>
<tr>
<td>Totally Feed OM Consumption (kg/d)</td>
<td>SB0 2.86a</td>
<td>SB1 3.23b</td>
</tr>
<tr>
<td>Rice Straw Fermented CF Consumption (kg/d)</td>
<td>SB0 0.62a</td>
<td>SB1 0.72b</td>
</tr>
<tr>
<td>Biosupplement CF Consumption (kg/d)</td>
<td>SB0 0.206b</td>
<td>SB1 0.163a</td>
</tr>
<tr>
<td>Totally Feed CF Consumption (kg/d)</td>
<td>SB0 0.828a</td>
<td>SB1 0.878a</td>
</tr>
<tr>
<td>Rice Straw Fermented CP Consumption (kg/d)</td>
<td>SB0 0.142a</td>
<td>SB1 0.163b</td>
</tr>
<tr>
<td>Biosupplement CP Consumption (kg/d)</td>
<td>SB0 0.164a</td>
<td>SB1 0.341b</td>
</tr>
<tr>
<td>Totally Feed CP Consumption (kg/d)</td>
<td>SB0 0.306a</td>
<td>SB1 0.504b</td>
</tr>
<tr>
<td>Feed Conversion Ratio/FCR</td>
<td>SB0 7.12a</td>
<td>SB1 5.91a</td>
</tr>
</tbody>
</table>

Resources: Partama et al. (2016)

Notes: DM=Dry Matter, OM=Organic Matter, CF=Crude Fiber, CP=Crude Protein

1) The Treatmen SB0 = bali cattle was given rice straw fermented and biosuplement without lignocellulolytic bacteria consortium, SB1 = bali cattle was given rice straw fermented and biosuplement selected 1 (SBR2T1), SB2 = bali cattle was given rice straw fermented and biosuplement selected 2 (SBR2T1), SB3 = bali cattle was given rice straw fermented and biosuplement selected 3 (SBR2T1).

2) The same letter in same row is not significantly different (P>0.05).

3) SEM = Standard Error of the Treatment Means.

Bali cattle blood urea concentration by the four treatments showed no significant results (P>0.05) and were within the normal range (49.98 to 56.90 mg/dl). Hungate stated that normal blood urea on cattle ranged from 26.6 to 56.7 mg/dl. In this study, administration biosupplement bacteria consortium produces blood urea concentration quantitatively higher than given biosupplement control (no bacteria consortium/treatment SB0) is 53.44 - 56.90 mg/dl vs. 49.98 mg/dl, but in statistically not significant.

Giving biosupplement selected especially SB1 and SB2 capable of producing concentrations of totally cholesterol and HDL were higher (P<0.05) than the feeding biosuplemen control (SB0), respectively from 171.34 to 183.21 mg/dl vs. 141.15 mg/dl; 143.40 to 160.28 mg/dl vs. 105.38 mg/dl (Table 7). Generates high cholesterol levels in the administration of the biosuplemen bacteria consortium Bali cattle rumen and termites showed the effectiveness of high biosupplement in optimizing the utilization of feed by livestock as showed lower feed conversion ratio (FCR) (Table 7). Besides that, the superior lignocellulolytic bacteria consortium will assist the process of metabolism in the body of Bali cattle for the better. It produces high levels of HDL are also an indication of the health of livestock body so well that the resulting meat is also high quality.

Trigleserida and LDL blood concentration as a reflection of the content and quality of body fat in all treatments (SB0, SB1, SB2, SB3) has a value not significant (P>0.05) with each level from 27.01 to 41.79 mg/dl and 14.58 to 30.37 mg/dl. Trigleserida and LDL blood concentration is low and not significant due to the possibility of all the feed is fermented fodder that provided organic acids that participate limiting production of triglycerides and LDL. It also indicates the
metabolic processes of all livestock is going well so that the quality of products (meat) produced is also high.

Blood HDL concentrations in this study is higher than the blood LDL. This condition is a positive thing because of the increased blood HDL will improve the quality of meat and had no negative effect on consumers. Anderson\textsuperscript{17} stated that high levels of HDL are important because HDL also acts as an antioxidant and anticoagulant to prevent the occurrence of various diseases in the body of livestock. But on the contrary if there is a decrease in HDL cholesterol are at risk for the occurrence of hardening of the arteries (atherosclerosis) and cardiovascular disease for consumers who consume the meat of cattle\textsuperscript{18,19}.

CONCLUSION

Based on the results of this study concluded that administration biosupplement bacterial consortium can improve blood chemistry profile, especially glucose, totally cholesterol and HDL blood, but had no effect on levels of urea, triglyceride and LDL blood.

ACKNOWLEDGEMENT

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