STUDY OF MAINTENANCE OF CATTLE BY LIVESTOCK ORIGIN THAT ARE DIFFERENT IN LALEMBUU DISTRICT SOUTH KONAWE DISTRICT

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ABSTRACT

Beef cattle livestock businesses have an important role in the life of the breeder. Maintenance of beef cattle is generally still done traditionally so that its growth is relatively slow. Beef cattle breeders in the District of Lalembuu come from the origin of the different breeders (Java, Bali, and the Bugis). Based on the preliminary studies it is known that the breeder who originated from different areas has the habits and patterns of different maintenance. Survey and interview method applied to this study involving 60 ranchers respondents. The observed variables are characteristics of respondents, maintenance patterns, system maintenance, maintenance management, business scale, and the outpouring of work (hours of work). The pattern of beef cattle livestock business in district Lalembuu is a pattern of business nurseries. Percentages are based on the original breeders of the Bugis, Javanese, and Balinese is 95%, 90%, and 80%. System maintenance of cattle beef cattle in the District of Lalembuu more dominant done in semi-intensive, with the percentage of each of the original breeders from Bali, Java, and Bugis is 90%, 75%, and 65%. Maintenance management of cattle beef cattle in Lalembuu is a) the ownership of the purchased cattle breeder from Bali is 70%, Java is 55%, Bugis is 50% and the rest using rowdy's system. b) type of feed combination (elephant grass, rice bran, and agricultural waste) provided by the java breeders is 85%, Bali is 70%, Bugis is 65% and the rest use natural grass. c) marital system applied by all breeders are natural breeding. d) The dominant origin of breeders do not perform the treatment against his cattle afflicted by the disease) workflow of the breeder from Bugis, Java, and Bali each is 0,4, 0,44, and 0,46 HOK. The result oh different tests (t-test) showed that there was not significantly different (P>0,05) on workflow from the breeders.

Key Word: Beef Cattle, Maintenance, The Origin of Breeder

INTRODUCTION

Southeast Sulawesi is one of the livestock development centers in eastern Indonesia that has natural resources that are quite potential for ruminants including beef cattle because it has a relatively large area of land (38,140 km2). (BPS Sultra, 2012).

Poor maintenance management and high rates of slaughtering productive females, resulting in hampered beef cattle population development. Meanwhile, South Konawe District in 2011 was the region with the largest beef cattle population of 55,129 or 23%, followed by Muna District with 49,075 or 20.47%, and in the third place was Konawe Regency with 47,688 or 19.89% of the total beef cattle in Southeast Sulawesi (BPS Sultra, 2012).

Based on preliminary studies, it is known that breeders from different regions have different habits, which are thought to have a pattern of raising beef cattle. Therefore, research needs to be conducted on "Study of Beef Cattle Maintenance According to Different Farmers' Origins in the District of Lalembuu, Konawe Selatan Regency".

MATERIALS AND METHODS

Research Location and Time

This research was conducted for 2 months, starting from May to June 2013 in the District of Lalembuu, Konawe Selatan Regency, Southeast Sulawesi Province.
Determination of Location and Selection of Respondents

This research was conducted by survey method and determining the location/village in Lalembuu Subdistrict by purposive sampling, namely deliberately determining the villages representing the origin of each of the 2 villages from Java, 2 villages from Bugis, and 2 villages from Bali, so the number is 6 villages (Potuho Jaya Village, Atani Indah Village, Lambodi Jaya Village, Sumber Jaya Village, Padaleu Village, and Purema Subur Village). The determination of the research location villages for each area of origin is based on the highest number of livestock. The number of respondents in each village is 10 people, so the total number is 60 respondents. The determination of respondents in each selected village is carried out randomly.

Types and Data Collection Techniques

The data to be collected in this study consists of primary data and secondary data. Where primary data can be obtained through direct interviews with respondents of beef cattle breeders, using questionnaires that have been prepared previously, and secondary data that is data obtained from various sources such as data from village offices, sub-districts, agriculture offices, books, bulletins or journals, and the internet that is relevant to this research study. The method used to collect data is by interview, observation, and documentation. The interview is data collection using a questionnaire or questionnaire through interviews with respondent farmers. Observation, namely visits and direct observation at the location of beef cattle raising. Documentation, namely taking photos/images that are the object of research.

Data analysis technique
1. Respondent characteristic data related to beef cattle breeding, namely business patterns, maintenance systems, and beef cattle maintenance management that will be tabulated and analyzed descriptively.
2. Analysis to find out the time spent of breeders working with different origins of Javanese, Balinese and Buginese ethnicity is used analysis of the Equivalence Test of Two Average Test of Two Parties used according to the formula (Sugiono, 2007):

\[ r = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} \]

RESULTS AND DISCUSSION

Characteristics of Respondents

The characteristics of respondents in this study include social characteristics. The social characteristics of the farm analyzed include age, education, occupation, and experience of raising livestock.

Age

Opinion Suratiyah (2006) states that dividing the age ie age less than 15 years is categorized as non-productive age, age 15-54 years is categorized as productive age, and age more than 55 years is categorized as less productive age. The age classification of respondents at the study site can be seen in Table 1.

Based on Table 1 that the age of farmers in the study location when assessed from the age characteristics of respondents most of the breeders are in the productive age category (15-54 years) which is equal to 81.67%. This is because the age of breeders is still young and has strong physical abilities so that the potential to work and manage their livestock is still very large. While breeders in the category of unproductive age-aged more than 55 years are 18.33%. In this condition, the physical ability of farmers has decreased so that the ability to work and manage livestock has been reduced.

This is in line with the opinion of Fatati (2001) that the younger a person is, the easier it is to accept changes from the outside because breeder farmers always want to try something new.
new as an effort to increase their knowledge and skills in their business. Compared to the three origin breeders who are domiciled in the study site, 90% of Bali breeders have productive age categories compared to the origin of Javanese and Bugis breeders, respectively 80% and 75%.

**Level of education**

The level of education is one of the things that can affect the development of a business. The length of time attending formal education by breeders at the study site varied between 6-12 years with an average of 8 years. Farmer education is only at the Elementary School level (SD) to High School Level (SLTA). Classification of the level of education of respondents at the study site can be seen in Table 2.

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Jawa</th>
<th>Bali</th>
<th>Bugis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>16</td>
<td>9</td>
<td>45</td>
<td>40</td>
</tr>
<tr>
<td>SLTP</td>
<td>2</td>
<td>3</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>SLTA</td>
<td>2</td>
<td>8</td>
<td>40</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>60</td>
</tr>
</tbody>
</table>

Table 2 shows that farmers in the study location had a relatively low level of education with the number of farmers having completed primary school being very dominant at 66.67%. The rest is 15% junior high school and 18.33% senior high school. The low level of education in the research location can cause underdevelopment of beef cattle farms as a result of farmers having difficulty accepting innovations and technologies in the field of animal husbandry.

Lestraningsih and Basuki (2008) state that the level of education affects the ability of farmers in the application of technology. The results showed that the level of high school education from Bali farmers was 40%, Java 10%, and Bugis 5%. This shows that the origin of Balinese breeders is more dominant having a higher level of education so that breeders are more receptive to information, innovation, and technology in the field of animal husbandry and the end the business of beef cattle from Bali breeders are better than that of Javanese and Bugis breeders.

**Type of work**

In general in Southeast Sulawesi, especially in the District of Lalembuu, raising cattle for breeder cattle is still considered a sideline business with a relatively small scale of business with the application of simple technology so that productivity is still low. The people of Lalembuu Subdistrict have a variety of livelihoods apart from beef cattle business so that it can be seen in Table 3.

<table>
<thead>
<tr>
<th>Source of Livelihood</th>
<th>Jawa</th>
<th>Bali</th>
<th>Bugis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>19</td>
<td>80</td>
<td>75</td>
<td>50</td>
</tr>
<tr>
<td>Trader</td>
<td>1</td>
<td>4</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Employee</td>
<td>-</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>100</td>
<td>100</td>
<td>60</td>
</tr>
</tbody>
</table>

Table 3 shows that the livelihoods of beef cattle breeders in the study location were dominated by farmers by 83.33% and the rest worked as traders 11.67% and employees 5%. This shows that there is still a large area of land so that the majority of the community is more dominant in their livelihood than farming as traders and employees.

The results showed that 95% of the origin of Javanese breeders who work as farmers are greater when compared to the origin of Bali and Bugis breeders as much as 80% and 75%, the rest work as traders, employees, and entrepreneurs. The interview results show that the origin of Javanese breeders has a higher farming culture and a fairly large area of land compared to the origin of Balinese and Bugis breeders. Then the origin of Javanese breeders also prioritizes farming while raising livestock as a side or family
savings. Supported by Soehadji's opinion in Anggraini (2003) farmers working on agricultural commodities, especially food crops, while livestock only as a part-time business to meet family needs (subsistence) with a level of business income from livestock <30%.

Breeding experience

Table 4. Farming Experience of Respondents in the Lalembuu District

<table>
<thead>
<tr>
<th>Breeding Experience (Years)</th>
<th>Beef cattle breeders based on the regional origin</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jawa</td>
<td>Bali</td>
</tr>
<tr>
<td>&lt; 5</td>
<td>9</td>
<td>50</td>
</tr>
<tr>
<td>&gt; 5</td>
<td>11</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4 shows that beef cattle breeders in the study location can be categorized as quite experienced, it can be seen from the number of breeders who maintain beef cattle> 5 years by 51.67%. This shows that with the long experience of raising livestock, the knowledge of breeders is increasing, so the ability to manage beef cattle farming is getting better. This opinion is reinforced by the statement of Mastuti and Hidayat (2008) stating that the longer it is expected to raise more knowledge so that the skills in running a livestock business will increase. The results of this study illustrate the level of experience of breeders> 5 years at the origin of Javanese breeders by 55% higher when compared to the origin of Balinese and Bugis breeders at 50% each. The high experience of breeders from Javanese breeders is due to their breeding habits tend to raise large livestock such as cows and goats, while for origin Balinese breeders are more likely to raise pigs. Whereas the origin of Bugis breeders is more likely to raise small livestock such as chickens, ducks, and entogs.

Business Pattern

Safitri (2011) states that the survival of healthy beef cattle with good growth can be maintained with good care and care. The pattern of the beef cattle business in the study location can be seen in Table 5.

Table 5. Business Patterns of Beef Cattle Respondents in Lalembuu District

<table>
<thead>
<tr>
<th>Maintenance Pattern</th>
<th>Beef cattle breeders based on the regional origin</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jawa</td>
<td>Bali</td>
</tr>
<tr>
<td>Nursery</td>
<td>18</td>
<td>90</td>
</tr>
<tr>
<td>Fattening</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 5 shows that breeders in the study location have a business pattern aimed at breeding seen from the number of breeders who aim to raise cattle for seedlings by 88.33% while those used for fattening are 11.67%. This shows that the maintenance pattern intended for breeding is greater because the land in the research location is still large enough so that farmers tend to keep livestock as a source of seed. Compared to the three origin breeders domiciled at the study site, 95% of the Bugis breeders originated had a maintenance goal for breeding greater than those from Java and Bali breeders at 90% and 80%, respectively. Whereas for fattening, 20% origin of Balinese breeders is greater than the origin of Javanese breeders 10% and Bugis ethnicity 5%.

Maintenance System

The cattle-raising system is very influential in the production and reproduction process of beef cattle. In general, cattle breeding done by farmers is semi-intensive. The beef cattle maintenance system at the study site can be seen in Table 6.
The data in Table 6 shows that most of the beef cattle breeding systems at the study site were applied by semi-intensive farmers as many as 76.67%, the rest 18.33% extensively and 5% intensively. This shows that farmers prefer semi-intensive maintenance systems because the handling is easier, wherein the morning until the afternoon the cattle are grazed while at night the animals are sheltered and given an additional forage.

Compared to the three origin breeders who live in the study site, 90% of Bali breeders apply a semi-intensive maintenance system, while the origin of Javanese and Bugis breeders are 75% and 65% respectively. This is due to the working hours/day of breeders from Bali breeders who are prioritized to take care of livestock compared to taking care of agricultural land.

The origin of breeders who apply intensive maintenance systems is 15% while the origin of Bali and Bugis breeders do not implement maintenance systems like this, because the origin of Java breeders has enough labor to look forage and grazing locations far enough away, so apply intensive maintenance systems. Extensive maintenance systems, 35% from Bugis breeders are greater than from Java and Bali breeders with 10% each. This shows that the origin of the Bugis breeders has sufficient forage in grazing land. Supported by Diwyanto and Subandriyo's opinion (1995), the pattern of raising beef cattle that is still extensive causes the productivity of beef cattle to be relatively low. The role of beef cattle in agribusiness-oriented farming systems, superior breeds are very limited, low feed quality and appropriate technology are not available.

### Beef Cattle Maintenance Management

Optimal cattle maintenance management from birth is needed to get cattle that have high production and productivity that are ready to replace cattle that are no longer producing, both as a parent and a male. Cattle maintenance starting from handling of births, giving identity, feeding patterns, monitoring growth and weight gain, prevention, and treatment of diseases greatly influence the success of beef cattle business.

### Seed source

Cattle breeds raised by breeders at the study site are types of Bali cattle, Simpo and PO cattle (Peranakan Ongole). In general, the source of beef cattle breeds raised by respondents comes from buying and rowdy.

The data in Table 7 shows that 58.33% of beef cattle breeding sources in the study location were generally obtained by purchase either from the Lalambuu District itself or from outside species such as Lere (Basala District) and Lapoa (Tinanggea District). While livestock germus obtained by boiling that is equal to 41.67%. This shows that the origin of the beef cattle breed raised by respondents generally buys livestock because farmers have the desire to be supported with capital to develop a beef cattle business.

The results showed that 70% of the origin of Balinese breeders bought beef cattle breeders compared to the origin of Javanese breeders 55% and Bugis 50%. This shows the origin of Bali farmers have high capital so that more livestock are purchased. While the source of seedlings by rowing, 50% from Bugis

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### Table 6. Beef Cattle Maintenance System in Lalambuu District

<table>
<thead>
<tr>
<th>Maintenance System</th>
<th>Beef cattle breeders based on the regional origin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jawa</td>
</tr>
<tr>
<td>Person %</td>
<td>Person %</td>
</tr>
<tr>
<td>Extensive</td>
<td>2</td>
</tr>
<tr>
<td>Intensive</td>
<td>3</td>
</tr>
<tr>
<td>Semi Intensive</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
</tr>
</tbody>
</table>

### Table 7. Sources of Beef Cattle Breeds in the Lalambuu District

<table>
<thead>
<tr>
<th>Seed source</th>
<th>Age of beef cattle breeders based on the regional origin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jawa</td>
</tr>
<tr>
<td>Person %</td>
<td>Person %</td>
</tr>
<tr>
<td>Buy</td>
<td>11</td>
</tr>
<tr>
<td>Rowdy</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
</tr>
</tbody>
</table>
breeders were more than those from Java breeders 45% and Bali 30%.
The results of interviews with the origin of the Bugis breeder that for farmers who do not have the capital can raise livestock by rowing. This method provides benefits for farmers who do not have the capital because farmers can obtain some beef cattle only by raising other people's livestock. Procedure for the distribution of rowdy cattle at the location of the study is cattle that are kept in pregnant condition, then the first child becomes part of the livestock owner, then the second child becomes the owner of the cattle rattler. Meanwhile, if cattle are kept young 1-2 years old or not pregnant then the first child belongs to the rowdy, then the second child becomes part of the livestock owner and so on. Most of the Bugis ethnic breeders prefer to be rowdy rather than buying livestock, with the consideration of obtaining cattle without spending a fee.

**Type of feed**
Animal feed plays a very important role in the livestock business and forms the largest part of the total production cost. Animal feeds must be maintained in quality and quantity so that the process of development, basic life, and production are produced to be good. The type of feed given to beef cattle in the study location can be seen in Table 8.

<table>
<thead>
<tr>
<th>Feed Type</th>
<th>Beef cattle breeders based on the regional origin</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jawa %</td>
<td>Bali %</td>
</tr>
<tr>
<td>Natural grass</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Combination of feed types</td>
<td>85</td>
<td>70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Description: Types of superior feed, agricultural waste, and rice bran

Most (73.33%) beef cattle farmers in the study location have understood the importance of forage needs for beef cattle, so farmers prefer semi-intensive maintenance systems because feed needs for production and reproduction can be fulfilled. While some breeders (26.67%) still use natural grass in the pasture as animal feed. The results showed that 85% of Javanese breeders used a combination of types of feed compared to 70% of Balinese breeders and 65% of Bugis. The results of interviews on the origin of Javanese farmers on a combination of types of feed used are more varied, namely rice bran, natural grass, elephant grass and agricultural waste (rice straw and corn stalks) and origin of Bali breeders namely natural grass and agricultural waste (banana stems and water spinach) while the origin of the Bugis breeders of natural grass, elephants and Setaria.

**Marriage system**
Reksohadiprodjo (1984) states that the livestock breeding system is twofold: (1) Natural mating is the marriage of males with females in cages or the field, and (2) Artificial Insemination, namely the insertion of semen into the female genital tract using human-made tools.

**Disease control and prevention**
To control disease, the more important thing to do in the prevention of disease rather than treatment, because the use of drugs will increase production costs and guarantee the success of treatment. Prevention efforts that can be done to maintain the health of cattle are: (1) Maintain cleanliness of the cage and its equipment, including bathing cattle, (2) Diseased cattle are separated from healthy cattle and treated immediately, (3) Keeping the floor of the cage always dry, (4) Checking livestock health regularly and vaccination according to instructions (Fatah, 2008). The control and handling of beef cattle disease in the study location can be seen in Table 9.
Table 9 shows that beef cattle breeders in the study site 61.67% did not treat sick animals. Treatment for livestock diseases is (38.33%) because the disease experienced by livestock is still classified as a disease that is easily overcome by breeders, a type of disease that often attacks beef cattle in the research location is intestinal worms, bloating and eye pain. Drugs used by breeders are medical drugs consumed by humans such as balm combination and kitchen salt, but the results obtained are not as expected by farmers, because their livestock is still sick.

Compared to the three breeders originating at the study site, 65% of Bali breeders did not treat beef cattle compared to the origin of the Javanese and Bugis breeders who were 60% each. While the origin of Javanese and Bugis breeders treated 40% of their sick animals and 35% from Bali breeders.

The results of interviews at the study site are generally farmers to treat diseases of cattle by combining medical drugs that are consumed by humans and traditionally for the healing process of sick cattle. However, traditional treatments that are more prominent, for example, cattle that are suspected to be worms and bloat, are given human worm medicine and herbal concoctions, but after being treated have not shown an improved condition, the farmers ask for help from officers.

Business Scale or Number of Ownership of Beef Cattle

The population of beef cattle in the southern Konawe Regency is mostly in the Lalembuu District. Beef cattle ownership in the study location can be seen in Table 10.
The outflow of labor time in the beef cattle business in Lalembuu District includes: cleaning cages, preparing feed, preparing drinking water, and tending livestock. The use of working time in raising beef cattle by family labor and the results of statistical tests (t-tests) using SPSS15 software are presented in Table 11.

<table>
<thead>
<tr>
<th>Origin of breeders (ethnic)</th>
<th>Average Hour/day</th>
<th>Uji perbandingan (t-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Origin of Javanese Breeders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>t</td>
</tr>
<tr>
<td>Bugis</td>
<td>1.95</td>
<td>1.05</td>
</tr>
<tr>
<td>Jawa</td>
<td>2.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Bali</td>
<td>1.95</td>
<td>1.15</td>
</tr>
</tbody>
</table>

Ket: α = 0.05, \( t \) = not significantly different, L = adult male, P = woman, A = children

The average working hours of Balinese breeders every day in raising beef cattle tend to be higher than those of Javanese and Bugis breeders. The time spent on the workforce of men, women, and children every day for Balinese breeders is 1.95 hours/day, 1.15 hours/day, and 1.7 hours/day. While the origin of Bugis breeders tends to be lower in the workforce of adult men, adult women, and children, respectively 1.95 hours/day, 1.05 hours/day, and 0.9 hours/day. The system of raising beef cattle from Bali breeders is a semi-intensive system and is aimed at fattening so that the family labor demand is higher than those from Java and Bali breeders.

Different test results with t-test showed that the time flow of labor between the three breeders origin was not significantly different, meaning that the time spent raising the beef cattle by the origin of Java, Bali and Bugis breeders were generally the same (P > 0.05) or there was no a significant difference in the number of hours worked by the origin of the farmer.

The results showed that the use of the number of hours worked in managing cattle between the origin of Bali, Bugis and Javanese breeders looked the same because each origin breeder at the study site had a cage and the cage cleaning process carried out also looked the same ie collecting leftover feeds and cleaning the floor from cow dung (feces and urine). The type of feed used also looks the same as relying on natural grass and a combination of the types of feed obtained by farmers on agricultural land and pastures. This also shows that the distance of farmers to take feed looks the same because when feed is abundant in agricultural land, farmers from each ethnic group use the feed for their livestock and vice versa. While for the availability of feed also looks the same because during the dry season each farmer has difficulty finding feed and in the rainy season abundant feed availability.

CONCLUSION

The conclusions of this study are as follows:

1. The pattern of the beef cattle business in Lalembuu District is the breeding business pattern. The percentage based on the origin of breeders from Bugis, Java, and Bali is 95%, 90%, and 80%.

2. The system of raising beef cattle in the Lalembuu sub-district is predominantly conducted semi-intensively, with the percentage of origin of breeders from Bali, Java, and Bugis being 90%, 75%, and 65%, respectively.

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