

Explorative Study Through Survey, Monitoring And Diagnosis Disease of Bali Cattle In Mehara District Of Lautem

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ABSTRACT: The research aimed to obtain information from farmers about animal health business. Examination of animal health physiology status through pulsus measurement, breath frequency, rectal temperature, habitus, and nutritional status. The method used is Explorative Study approach. Data were obtained through interviews with 50 farmers, checking the health status of livestock, reviewing livestock raising systems in the field and taking blood for disease diagnosis. Interviews gathered information on livestock raising in terms of feeding aspects (types of feed given and feeding methods), aspects of marriage (marriage method and identification of livestock) and reviewed from health aspects (vaccination program, worm medication and drug administration) to livestock if cattle are sick. The data obtained are presented in the form of tables and drawings, then analyzed descriptively. The result of the research showed that the farmers under 65 years old were 65,7%, high school education 42,9%, breeding experience above 5 years 63%, all breeder of male gender, all breeders did not have group of livestock, is as a savings, the number of livestock owned between 6-10 tail and more than 10 tail respectively as much as 42.85%. Housing system: All cage farmers away from home, Construction of wooden enclosure, clean cage cleanliness (99.97%), Area of cage \pm 10-25 m². System Management: Sources of animal feed all derived from grass in the pasture no additional feed, Reproduction Management: entirely through natural mating, Identification of livestock by breeders through cow behavior, veterinary management: No vaccination program, If cow sick cow is left (57.1%) and sold (42.4%), No worm medication. Serological test results of all seropositive samples of SE disease. Maintenance of farms in District Tutuala is semi intensive. Animal feed given only field grass. The majority of farmers only use natural mating. Health efforts to control disease independently such as vaccination, Vaccine and worm medication is done if there is a program from the relevant Office. Based on screening test of brucellosis disease, SE and Jembrana are known samples of seropositive livestock group against SE disease.

Keywords: Eksploratif, Monitoring Diagnosis Disease Bali Cow

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I. INTRODUCTION

Livestock is one of the sectors that is enough to give a big contribution in meeting the nutritional needs of the community, especially animal protein that is very useful for health and brain intelligence. The animal protein referred to here is obtained from beef. But the availability of domestic beef is still limited, due to the low population of cattle owned by cattle ranchers due to the emergence of various diseases that breeders have no knowledge and skills in prevention and handling.

Livestock health is the key determinant of success of a livestock business. In general, animal disease is anything that causes animals to become unhealthy. Healthy animals are unhealthy animals with characteristics (a) free of infectious or non-infectious diseases, (b) do not contain ingredients that harm human beings as consumers, and (c) are able to produce optimally. The success of beef cattle breeding business, both reeding seed producers) and fattening (fattening), depends on the health of livestock. So the handling, control and prevention of disease should be a top priority (Bandini, 1997). Poor health status will result in minimum daily weight gain, emissions, susceptibility to other diseases, death of livestock and pedetnya, reproductive status disorders, Lowre productivity and productivity of these animals. Livestock health

Directly affect the productivity of beef cattle producers and seed cattle. Preparation of a form of evaluation of animal health efforts undertaken by farmers and also to obtain a health profile of beef cattle selected in the Mehara District Lautem. This area is a potential area for the development of beef cattle breeding business, such as farmers, adequate land resources, and the availability of forage. Establishment of this evaluation model is expected to be used as one of the considerations for the Local Government and the local Animal Husbandry Department to make improvements to the system of maintenance and health of beef cattle in the areas.

II. METHOD

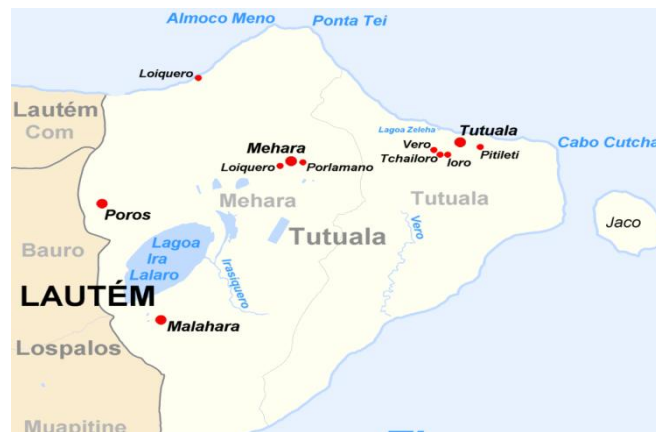
The method used is Explorative Study approach. The data were obtained through interviews with 35 farmers, checking the health status of livestock, reviewing livestock keeping systems in the field and taking blood for disease diagnosis. Interviews were directed to explore information about livestock raising methods in terms of feeding aspects (types of feeding methods), aspects of marriage (marriage method and identification of livestock) and reviewed from health aspects (vaccination program, worm giving and giving drugs to livestock if cattle sick (Bandini, 1997). The data obtained are presented in the form of tables and drawings, then analyzed descriptively. For blood sampling the serum was taken by means of a targeted sampling technique from Lautem Village Mehara district. Target sampling is

Sampling in areas of frequent outbreaks, areas with history. Blood samples were taken from the jugular vein of Bali cattle with 2 ml spuite, allowed to stand for 18-24 hours or centrifuge for 45 RPM at room temperature. The serum separated from the blood clot is then collected in a sterile tube and stored in a freezer with a temperature of -200C or -700C until use. Each tube is labeled using numbers and letters to mark the origin of the serum.

III. RESULTS AND DISCUSSION

Regional General Condition

Mehara is a Sub-District Lautem, at the far end of Republic Democratic De Timor Leste, this subdistrict has 2 Villages namely Mehara and Tutuala large grazing areas the southern region has an area of \pm 310 ha. From statistical data 2004. By Administrative Tutuala has territorial boundaries: North side borders the Village of Com, Regency of Tutuala in the east, Regency of Malahara in the south, Regency of Somoco in the west. Tutuala map can be seen on the picture below.



Livestock grazing land in District Tutuala of 310 ha. With a total population of cattle 12,389. Grazing land can be seen in the picture below



Cattle Breeders Profile

Based on the data obtained kuisoner showed that farmers aged less than 50 years of 65.7% and above 50 years of 34.3%. While the education age of breeders varies. Animal Husbandry with 20% elementary education, junior high school education 31.4%, high school education 42.9%, University 2.85% and no school 2.85%. Experiences farmers also different. Farmers who have less than 5 years of farming experience of 37% and more than 5 years 63%. Based on this research, breeders are adults who have had self-concept, learning experience, and readiness to learn to improve the quality of life better. Hariadi (2009) reported dynamic extension model and not relying on new innovations as a bank system will be able to change the breeders from the original safety first principle to profit oriented. Based on the number of cows owned by farmers who have cattle between 5-10 tail percentage of the same as the breeder whose number of cows above 10 tail is 42.85% while the ownership of cows with the number of 1-5 tail as much as 14.3%. Gender breeder 100% male. Farmers do not have farmer groups or do not belong to farmer groups. Breeding experiences are traditionally or hereditary. They are farmed because it is strongly pushed by the desire to make livestock as social security and asset in meeting the basic needs of families and social groups, such as savings for school fees, savings for healthcare costs. Broadly speaking the profile of farmers can be seen in table 1 below.

Table 1. Profile of Breeders in Sub-District Tutuala

No	Characteristic	Total Farmers	%
1	Old		
	a. Below 50 years	23	65,7%
	b. Over 50 years	12	34,3%
2	Education farmers		
	a. Secondary School	7	20%
	b. Junior high School	11	31,4%
	c. Senior high School	15	42,9%
	d. University	1	2,85%
	e. No School	1	2,85%
3	Esperiencefarmers		
	a. Below 5 years	13	37%
	b. On the 5 years	22	63%
4	Gender farmers		
	a. Male	35	100%
	b. Female	0	0%
5	Group in the farmers?		
	a. Yes	0	0%
	b. No	35	100%
6	Reason the farmer		
	a. Income	0	0
	b. Savings	35	100%
7	Total cattle the owned		
	a. 1-5 tails	5	14,3%
	b. 6-10 tails	15	42,85%
	c. On the 10 tails	15	42,85%

System Cage Of Cattle

The size of the cage depends on the number of livestock owned. The size of the cattle shed owned by the breeders in general has not met the standard. The colony-shaped enclosure is a cage placed in one cage in groups. The enclosure area is about $\pm 25 \times 25$ m² enclosure located in forest distance 2 km from settlement. A total of 29 breeders have a cage that is more than 2 km from the community residence. The cage building located in District Tutuala generally has non permanent building cage which can be seen in the picture below.



Figure 2. Construction of Balinese cattle cage in District Tutuala

The cage should not be too far from home. If in the forest should be easily affordable for its supervision. It should also be noted that the grazing rotation system in the grazing area (forest) (Hernowo, 2006). Rotation system with the intention to minimize the case of intestinal worms in the cow and provide opportunities grass can grow so that the availability of grass will continue (in continuity) (Santosa 2005).

Farmers who have an open cage that is a cage only a wooden fence and razor wire, without a roof that can protect the beef cattle from the rain as much as 100%. Open enclosures allow cows to easily get sick and disturbances that can endanger the livestock itself. In terms of cleanliness, as much as 99.97% (34 breeders) have a cage that cleanliness is still less attention. Only 0.03% (1 farmer) of the total farmers who have the awareness and routine in cleaning the cattle pens. An Overview of Bali Cattle Saving System in District Tutuala.

Table 2. Overview of Bali Cattle Trees System in District Tutuala

No	Description	Total Farmers	%
1.	Cage Locations		
	a. Separate from cage with distance <10 meters	0	0
	b. Separate from cage with a distance of ≥ 10 meters	0	0
	c. Separate away from home (located in the forest)	35	100
2.	Construction Cage		
	a. Good	0	0
	b. Medium	0	0
	c. Less	35	100
3.	Cage Cleaning		
	a. Good	0	0
	b. Medium	1	0,03
	c. Less	34	99,97
4	Materials used		
	a. Wood	35	100
	b. Cement	0	0
5	Large the Area Cage		
	a. 25 - 25 m ²	35	100
	b. ≤ 10 m ²	0	0

Patterns Management Of Feeding

The result of the interview is obtained by the farmer applying the traditional feed management system, which is only given forage feed only in the form of grass field. This system is a hereditary system that they have long lived, it can be seen from the performance of cattle body that is still not good and look thin. Consequences availability of forage feed is seasonal, all farmers (30 breeders) say that forage forage is not throughout sufficient the year. In the rainy season, forage is abundant whereas the dry season forage of cattle feed is limited, this causing less optimal cow growth. Farmers only recognize the traditional feed management system, farmers have never used additional feed such as agricultural waste or additional concentrates as an alternative to forage feed Lack of awareness of farmers in the use of land farming to grow cultivated grass causes less optimum growth of Balinese cattle in this area. In addition, the lack of knowledge of farmers in the management of animal feed is also a strong reason. Prominent effects of feed deficiency include cessation of reproductive cycle activity, quiet lust, ovulation abnormality, conception failure, and embryonic death. Dairy cows are most sensitive to nutritional deficiencies at late pregnancy levels if they have not reached physical maturity. This is shown by the delay of post-partum lust and the number of conceptions in the first pregnancy process (Hardjopranjoto 1995). Every animal requires a qualified feed including proteins, carbohydrates, fats,

vitamins, minerals, and water. (Williamson and Payne 1993). These elements in the animal body function to meet basic needs of life, production, and reproduction. Nutrition of livestock in sufficient quantity and quality will ensure the continuity of functions in the body of the livestock including reproductive function. Reproductive needs will not be disturbed if the minimum nutritional needs for life have been met (Toelihere 1981).

Profile of Livestock Reproduction Management. The marriage program done to produce genetic descent and good quality. The marriage system of beef cattle in the farm is generally natural marriage for artificial insemination. However, all breeders (100%) use the marriage system naturally because it has been done by breeders from generation to generation

Breeders rely solely on such systems as traditional reproductive systems. IB reproductive technology system has not been done. This is because the lack of awareness and knowledge of the breeders will benefit this system. IB interventions need to be done to improve the genetic quality of Balinese cattle. Cattle that are kept by farmers are generally wild so difficult to handle because inseminator experts need to be trained and provided (Darmadja, 1990). The success rate of natural livestock marriage in District Tutuala is quite high. Maintenance of cattle grazing can be seen in the picture below.



Picture. 3. Pasture land cattle on the District Tutuala

Introduction of common signs known by breeders is an anxious animal and reveals (20%) of the behavior of cattle and most (60%) breeders do not know and are left alone. Breeders breed cows that lust with males naturally (Cole and Cupps 1977). The time between the onset of the sign of lust until mated takes the right moment to get high fertility. Signs of lust are often missed and undetected because the animals mate naturally (Hernowo 2006). Farmers do not monitor cow lust because of shepherding and a stable away from home. It is feared that inbreeding can decrease the production quality and reproduction of livestock. There is a need for livestock monitoring and marriage controlled by livestock. Data on the reproduction management system of beef cattle can be seen in Table 3.

Table 3. An overview of Balinese Cattle Reproduction Management System by farmers in Sub-District Tutuala

No	Variable	Total Farmers	%
1	Method Marriage		
	a. Natural Marriage	35	100
	b. Artificial Insemination	0	0
2	Identification lust e cattle		
	a. See the vulva	0	0
	b. Behaviour the cattle	35	100
	c. Do not know (let it)	0	0
3	Program artificial insemination		
	a. There is	0	0
	b. There is not	35	100

Animal Health Management Profile

The success of a beef cattle farm is largely determined by the health the livestock itself. Livestock must be free from disease so that it can grow, produce / reproduce optimally, can be sold and bred more quickly, can provide optimal benefits for maintainers (Akoso 1996). Some measures such as cattle health maintenance and disease prevention are an important part in the management of a livestock business (Abidin 2002). Disease control is intended to keep animals away from diseases. There are two common means of livestock production such as vaccines and medicines. Some of the actions that must be done is the provision of antibiotics,

vaccinations and worm medicine (Akoso 1996). Interview results show some diseases that have attacked this area that causes death and loss is very high. These diseases have not been known because they have not been identified with field inspection or laboratory by the relevant agency that is the Animal Husbandry Department. It needs to be counseled about animal health management and programs. Results of interviews with 35 farmers that vaccination is done if there is a program from the government. All farmers vaccinated against livestock. Provision of vaccine ever done is Septicaemia Epizoticae (SE). This has been done to all the livestock in this area because the farmers do not want the livestock to die from attack disease. Diseases to watch out for in Bali cattle are Septicemia Epizootica (SE), Athraks, Surra, Bovine ephemeral Fever, Bovine Viral Diarrhea and Jembrana. Some disease agents can be transmitted by direct contact with sick, oral, and aerogenic animals. In addition to vaccines, deworming should also be done regularly. Provision of worming drugs done since the cows aged 1-2 months and then repeated 6 months and at the same time given vitamins. Provision of vitamins also needs to be done like Vitamin A, D, E and B complex (B12). Data on Balinese cow health management patterns can be seen in Table 4.

Table 4. Description of Health Management System

No	Variable	Farmer	%
1	vaccination: a. There is b. There is not	0 35	0 100
2	Effort to Overcome the Sick Cow: a. Reported to the clerk b. let it c. Lraight sold or slaughtered	0 15 20	0 57,1 42,9
3	Use of medicine: a. There is b. There is not	5 30	14,3 85,7
4	Deworming: . a. There is b. There is not	0 35	0 100
5	Types of Drugs Worms are used: a. Medicine Commercial / patent b. Medicine blend / Traditional	5 30	14,3 85,7

Physical Health Profile Of Livestock

The success of animal health efforts is measured by directly measuring the physical health of livestock. In general, the physical health of beef cattle in this area is quite good, this is evidenced in terms of physical examination of animals conducted directly on livestock. In general the behavior of normal cattle, due to active cattle movement, the attitude of Bali cows is alert when approached, aware and responsive to suspicious circumstances surrounding the situation. Condition body cow can be said still lack of nutrition because look skinny. At the time the cow is walking, the movement of the foot is done with a fair and no limp When the cow stood in a state of balance and rested on all four legs in a relaxed position. Skin and fur in general looks smooth and shiny, but there are some looks dirty and not shiny, this can be influenced by the consumption of unfavorable feed. The frequency of milk cow's varies breath, depending on the type and age of the cow. The frequency of Balinese cow breath in calf age was found to average 48 times per minute, young cattle were obtained with an average of 38-39 times per minute and adult cattle were on average 19-20 times per minute (Cockroft, 2002). This figure is fairly high, the cause of this cow is wild, moving very active and lively. The frequency of calf breath is 30-37 times per minute. High and low frequency of breath is influenced by several factors: size body, animal age, physical activity, anxiety, environmental temperature, pregnancy and animal health condition (Kelly 1984). The results of pulsus measurement on Bali cattle at calf age were obtained with an average of 91 times per minute, in young cattle the pulsus frequency was 85 times per minute and the frequency of the adult cow pulsus was 55 times per minute. The normal frequency of pulsus in calves can reach 100-200 times per minute and adult cattle reach 55-80 times per minute (Cunningham, 2002). The high pulsus in calves may be due to the physical activity of the cow, the age and physiological state of the cow. Temperature rectal is very important as a parameter. Cows can be said to healthy or sick. From the results of direct measurement, calf cattle obtained average rectal temperature is 39.2 °C, in young cows 38.3 °C, and adults 38.1 °C (Kelly 1984, Rosenberger 1979). Animal body activities such as many moves or after meals can increase body temperature due to increased metabolism. Functions and reproductive status of animals such as estrus, pregnancy and partus

also affect the animal body temperature. Temperature and environmental conditions also affect body temperature, where increasing environmental temperatures during the day can increase body temperature.

Table 5. Test Results Screening Disease

NO	Inspection materials	Inspection of the disease	Type checking	Result
1	15 Serum Bali cattle aged 3 years	Brucellosis	BRUBT	Seronegatif
2	15 Serum Bali cattle aged 3 years	SE	SEEAB	Seropositif
3	15 Serum Bali cattle aged 3 years	Jembrana	JDELISA	Seronegatif

Information : Checking done in BBVET Denpasar Bali. BRURBT: Brucella RBT-KAN, SEEAB: SE Elisa Antibodies, JDELISA: JD / BIV Elisa-KAN.

Anamnesis from known outbreaks of diseases are mucus out of the mouth, standing feathers, swelling of the jaw and the duration of illness 7-10 hours. From the inspection results note that 100% of samples examined all positively against SE Disease (Septicemia Epizootica). Brucellosis and Jembrana are negative. SE disease is also called Ngorok disease in cattle (Leyla *et al.*, 2003). SE disease cases are usually reported as animal deaths in a short period of time. In observation, animals experience an increase in temperature body, submandibular edema that can spread to the chest area, and respiratory symptoms with snoring sound or nasal discharge from the nose. Symptoms of the disease arise after the incubation period of 2-5 days. Clinical features show 3 phases. The first phase is the rise in body temperature, which is followed phase respiratory distress and terminated by the last phase of the condition of weakened and animals lying on the floor. Septicaemia is in most cases the most recent stage of events. The various phases of the above illness do not always occur sequentially and are dependent on the length of disease (Alwis, 1992). Reprtedexaminedpost-mortem, the apparent abnormality is subcutaneous edema with serogelatinous fluid especially in the submandibula, neck and chest regions.

Transmission of the disease is usually affected by stress, animal density, poor management, and seasons (Carter And Alwis 1989; Alwis, 1981; Alwis and Vipulasiri, 1980). The source of infective organisms in the newly suspected epidemic region of carrier animals is intermittently expelled by immune carrier animals but carrying the organisms in its tonsils (Carter and Alwis, 1981; Wijewardana *et al.* 1993). Many germs are secreted through the nasal passages in the early fever phase, so this period is an important period of transmission. Under favorable conditions, moist or wet conditions of excreted bacteria can last for a week thus allowing indirect transmission to other animals (Bain *et al.*, 1982).

Morbidity and mortality of the disease are influenced by various factors and their interactions. Age of endemicity from certain areas, previous disease events, immunity occurring and immune levels of groups animal are important factors. If the outbreak first struck the new territory, the extent of the spread would be very high and death could occur in animals of all ages (Carter And Alwis, 1989; Francis *et al.*, 1980). In endemic areas where the proportion of carriers is immune, the spread of germs is common. When germs spread to animals that are immune, this would be a booster of immune levels (De Alwis, 1981; Carter And De Alwis, 1989)

Although SE disease may occur at any time, the disease generally occurs and develops during the wet season where many animals experience stress due to being employed (Carter And De Alwis, 1989). The stressful conditions in the rainy season above lead to increased survival of germs in landlords and an increase in the number of organisms in the wet environment. Under weak host conditions, organisms in carrier animals persist and animal sensitivity the increases disease. Animals with poor conditions and reluctance of animal owners vaccinate also contributes to an increased incidence of disease (Mosier, 1993).

Based on survey results with interviews with breeders in the study sites know that animal health management program was never done. Disease vaccination programs and worm-worming programs were also never performed. Breeders will sell or let alone if the cattle are sick. As it is known that if the cattle are exposed to SE then the nasal snot can be a source of spread of Pasteurella multocida bacteria. Animals that heal can be Carrier (carrier). Therefore, routine vaccination program and immunity check (antibody titre status) to SE in the existing group livestock is required that no continuous outbreaks occur.

IV. CONCLUSIONS

Farm maintenance system in District Tutuala is semi intensive. The cages used are still non-permanent and still less feasible as a place livestock activity. Livestock feed is given only the field grass found in grazing land and the majority farmers only use natural mating the process of cattle mating they have. Health efforts to control disease independently such as vaccination, vitamin and deworming are not done. Vaccine and worm medication is performed if there is a program from the relevant institution. Based on screening test of brucellosis disease, SE and Jembrana are known samples of seropositive livestock group against SE disease.

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