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Original Article

Description of antemortem inspection of cattle at the Dimoro slaughterhouse, Blitar City

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ABSTRACT

The outbreaks of Foot and Mouth Disease (FMD) and Lumpy Skin Disease (LSD) in early 2024 significantly impacted livestock health conditions in Blitar City and led to an increase in emergency slaughter cases. The Dimoro Slaughterhouse plays a crucial role in ensuring the safety of animal-derived food through the implementation of antemortem inspections. This study aims to evaluate the health status of beef cattle and identify pathological conditions detected during antemortem inspections at the Dimoro Slaughterhouse. The research used a quantitative descriptive method with direct observation of 40 cattle during the period of June 13–19, 2025. Clinical examinations were conducted on the head, neck, thorax, abdomen, anus, and limbs. The results showed that most cattle were male (34 heads) and predominantly of the Limousin breed (19 heads). No clinical symptoms of FMD, LSD, fever, or other disorders warranting slaughter rejection were found. Mild findings such as dirt around the anus were recorded in some individuals. Overall, the antemortem inspection was carried out effectively and contributed to ensuring the safety of meat products for public consumption.

Keywords: Antemortem, cattle, FMD, LSD, Dimoro.

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Introduction

The increasing population and income of Indonesians have resulted in a continued rise in national demand for beef. The government should consider increasing beef consumption by providing support in technological improvements and capital credit assistance for beef cattle businesses, the majority of which are smallholder farms (Agus and Widi, 2018). According to Ofosu-Ampong *et al*. (2024), the government, as a fostering institution, must change mindsets and behaviors to improve the livestock system. This is especially true for beef cattle farms, which are still smallholder farms with simple and traditional management systems, generally on a small scale. Small-scale cattle farms will also struggle to cope with outbreaks such as FMD and LSD.

Infectious animal diseases such as Foot and Mouth Disease (FMD) and Lumpy Skin Disease (LSD) have become a serious threat to the livestock subsector in Indonesia. Animals affected by FMD are generally cloven-hoofed animals

such as cattle, buffalo, pigs, sheep, and goats. This disease is caused by an Aphthovirus from the Picornaviridae family and is characterized by fever reaching 39.5°C for several days, loss of appetite, and lesions in the mouth and four legs (Grubman and Baxt, 2004). Unlike FMD, LSD is a disease that only affects cattle and buffalo. It is caused by the Capripoxvirus from the Poxviridae family and is characterized by fever reaching 40 to 41.5°C for several days and the appearance of nodules on the skin (Haider *et al*., 2024). FMD and LSD have in common that they are both transboundary diseases and therefore must be reported.

FMD and LSD are categorized by the World Organization for Animal Health as Transboundary Animal Diseases because they are rapidly contagious and threaten food security, the economy, and trade. These diseases are not zoonotic, but they raise significant public concerns, particularly regarding the safety of meat and animal products (Ringa and Bauch, 2014). The increasing number of foot-and-mouth disease (FMD) cases in animals in Blitar City has raised public concerns about the safety of meat consumption.

According to Prempeh *et al*. (2001), FMD is not contagious to humans and meat is safe to consume after thorough cooking. Blitar City, as one of the livestock centers in East Java, has been significantly impacted by the outbreak of FMD and LSD. Since the first case was discovered in early 2024, there has been a drastic decline in livestock sales and an increase in emergency slaughter rates. The Dimoro slaughterhouse, as the official slaughtering facility in Blitar City, plays a crucial role in ensuring a safe and healthy meat distribution chain, particularly through antemortem inspections, which examine animal health before slaughter. Antemortem inspections are a crucial step in detecting clinical signs in animals before slaughter. These inspections aim to ensure that only clinically healthy animals are allowed to be slaughtered, ensuring that the resulting meat products are safe for public consumption (Jacobs *et al*., 2023).

This situation demonstrates the need to observe the effectiveness of antemortem inspections at the Dimoro slaughterhouse, so that the results can be used as a basis for education to reduce public panic. By conducting an in-depth study of the implementation of antemortem inspections, this thesis is expected to contribute to increasing public confidence in the safety and quality of meat.

Materials and methods

Research design

This research was conducted at the Dimoro Slaughterhouse in Blitar City, Batanghari Street, Sukorejo District, Blitar City, East Java, over a one-week period, from June 13-19, 2025.

Observed variables

The variables observed in this study were the clinical condition of the slaughtered animals. Observations were made on several aspects, including the type of cattle, sex, age, origin of the cattle, and an antemortem examination of the body parts, namely the head, neck, thorax, abdomen, anus, and legs. An antemortem examination of the head aims to identify the presence or absence of abnormalities such as excessive salivation in the mouth and nose, eye opacity, swelling in the head area, abnormal breath odor, blisters or abscesses in the mouth and tongue, and pale mucosa. An examination of the neck is carried out to identify the presence or absence of abnormalities such as swelling in the neck area and lesions or scabs on the skin around the neck. An examination of the thorax aims to detect abnormalities such as shortness of breath, rapid breathing frequency with an open mouth, and lesions or scabs on the skin of the thorax. An abdominal examination includes identifying abnormalities in the form of tympani (flatulence due to gas) and lesions or scabs on the skin of the abdomen. An examination of the anus aims to detect the presence of feces stuck around the anus, as an indication of digestive disorders or hygiene. Meanwhile, a foot examination is carried out to identify the presence of blisters or abscesses in the nail area, limping, and swelling in the feet.

Research procedures

This study used a descriptive quantitative method, conducting direct observations of animals to be slaughtered for one week. The study began

with tabulating the results of antemortem examinations, followed by direct observation of the presence or absence of clinical symptoms in the animals to be slaughtered. The data obtained from these observations were then processed and presented in the form of percentage tables or graphs.

Result

Table 1 shows the results of antemortem inspections of beef cattle entering the Dimoro Slaughterhouse in Blitar City from June 13 until 19, 2025. During the seven days of observation, 40 cattle were examined before slaughter. Of these, 34 were bulls and 6 were females, as shown in Figure 1. The highest number of cattle was recorded on June 14, 17, and 19, 2025, with 7 head each. Meanwhile, the lowest number occurred on June 16, 2025, with only 4 heads. The sex composition showed a dominance of bulls throughout the period. Most days showed 100% bull slaughter, such as on June 13, 15, and 18, 2025. However, female cattle slaughter still occurred on several days, namely June 14, 16, 17, and 19, 2025, with the highest number of 3 head on June 19, 2025.

Table 1. Cattle data at the Dimoro slaughterhouse, Blitar City, June 13-19, 2025 (Cattle gender, and breed)

Time	Cows (Heads)	Male	Female	FH	Simental	Limousine
June 13, 2025	5	5	0	2	3	0
June 14, 2025	7	6	1	1	1	5
June 15, 2025	5	5	0	1	2	2
June 16, 2025	4	3	1	1	2	1
June 17, 2025	7	6	1	1	2	4
June 18, 2025	5	5	0	0	1	4
June 19, 2025	7	4	3	3	2	2
Total	**40**	**34**	**6**	**9**	**13**	**18**

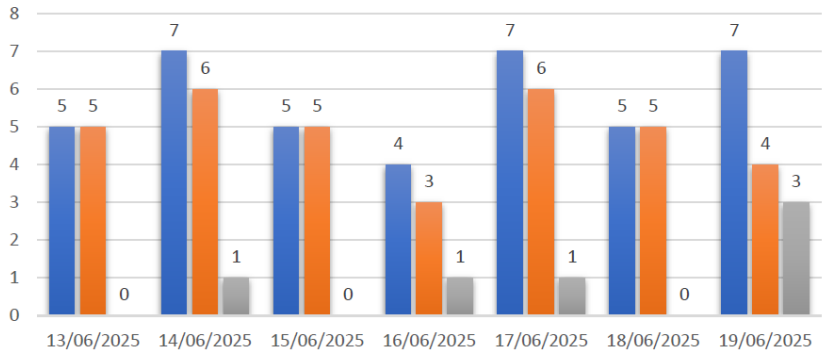

Figure 1. Gender of Cattle Slaughtered at the Dimoro slaughterhouse, Blitar City, June 13-19, 2025. Blue = Number of cattle; Orange = Male cattle; Gray = Female cattle

In Table 1, it can also be seen that there are three types of cattle breeds that are slaughtered, namely FH, Limousin and Simmental. Of the three types of cattle breeds, the breed that is slaughtered the most is Limousin cattle, while the percentage of FH cattle is 9 heads, Simmental cattle 13 heads and Limousin cattle 18 heads, which can be seen in **Figure 2**.

This difference in numbers may reflect the different primary functions of each cattle breed. Limousin and Simmental cattle are known as superior beef cattle with high-quality carcasses, while FH cattle are generally better known as dairy cattle, resulting in a smaller slaughter population.

The dominance of Limousin and Simmental

beef cattle slaughter also shows that the selection of types of cattle slaughtered at slaughterhouses shows that beef cattle farmers prefer crossbred cattle to local cattle such as Bali cattle and PO cattle, while the presence of FH cattle most likely comes from retired dairy cattle (no longer productive).

Based on the results of antemortem observations, all cattle showed no abnormalities that could indicate infection with diseases such as FMD and LSD. Rectal exploration was also performed on female cattle and found that none were pregnant. Body temperature examinations of the cattle also showed that they did not have a fever. The lowest body temperature measured during the examination was 37.4°C and the highest was 38.2°C. Cows are considered to have a fever if their body temperature exceeds 39.5°C for several days. Cows with fever can be indicated as suffering from FMD or LSD.

Table 2 shows no abnormalities, such as excessive salivation in the mouth and nose, eye opacity, swelling in the head area, abnormal breath odor, blisters or abscesses in the mouth and tongue, and pale mucosa. Examination of the neck also found no abnormalities such as shortness of breath, rapid breathing frequency with an open mouth, and lesions or scabs on the skin of the thorax. Examination of the abdomen also found no abnormalities in the form of tympani (bloated stomach due to gas) and lesions or scabs on the skin of the abdomen. Examination of the anus found feces stuck around the anus, as an indication of digestive or hygiene disorders. Meanwhile, examination of the feet also did not identify any blisters or abscesses in the nail area, limping, or swelling of the feet.

Table 2. Results of antemortem observations on June 13-19, 2025 at the Dimoro slaughterhouse, Blitar City

Time	Body Part Examination (Head, Neck, Thorax, Abdomen and Legs)	Body Temperature (Lowest–Highest)	Decision
June 13, 2025	None	37.6–38.2°C	Slaughtered
June 14, 2025	None	37.6–37.9°C	Slaughtered
June 15, 2025	None	37.6–37.9°C	Slaughtered
June 16, 2025	None	37.8–38.0°C	Slaughtered
June 17, 2025	None	37.4–38.0°C	Slaughtered
June 18, 2025	None	37.5–37.7°C	Slaughtered
June 19, 2025	None	37.7–38.1°C	Slaughtered
Total	**None**	**37.4–38.2°C**	**40 animals were slaughtered**

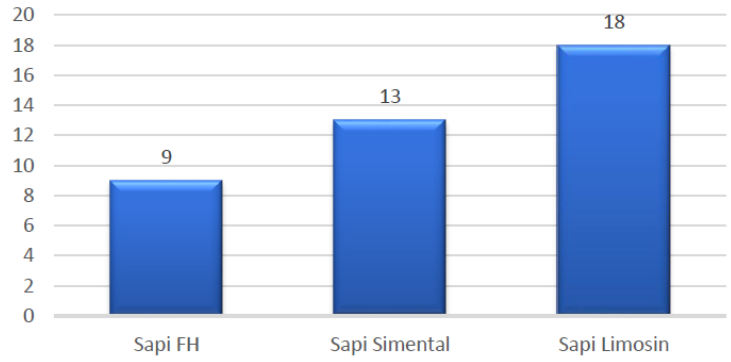

Figure 2. Cattle varieties slaughtered June 13-19, 2025 at the Dimoro slaughterhouse, Blitar City

Discussion

Andoni *et al*. (2023) stated that antemortem inspection is a crucial stage in the animal slaughter process, aimed at ensuring the safety of animal-derived food and animal welfare. Based on field observations and a literature review, cattle

behavior can be used as an important indicator to assess their health and well-being. During antemortem inspections, some cattle typically exhibit abnormal behavior, such as prolonged standing (idle standing), unusual sitting positions resembling "dog sitting," and repeated licking of objects or their own bodies.

According to Jurkovich *et al*. (2024), this type of behavior is closely related to chronic stress or pain caused by musculoskeletal disorders, infections, or uncomfortable housing environments. At slaughterhouses, behaviors such as excessive vocalization, reluctance to move, and changes in head and tail position are also observed, indicating discomfort or possible disease. Antemortem inspections are conducted by authorized veterinarians or designated personnel under the supervision of veterinarians. In this study, cattle at the Dimoro slaughterhouse in Blitar City were observed through clinical examinations to identify abnormalities or signs of disease.

The antemortem examination begins at the head, from the muzzle to the mandible. This examination includes observing the presence or absence of excessive salivation, the color and moisture of the mucosa, the presence of blisters or abscesses in the mouth and tongue, eye opacity, and swelling in the head area. In this study, no abnormalities were found in the head during the antemortem examination. However, abnormalities can still be found during the postmortem examination, as reported by Deepthi and Yalavarthi (2012) who found the presence of eye worms (*Thelazia* sp.) in one of the eyes of the head of the cow being examined. The antemortem examination then continues sequentially, starting from the neck, thorax, abdomen, anus, and legs. Based on the results of observations conducted on a number of cattle to be slaughtered, no abnormalities or problems were found during the physical examination. All animals showed normal body condition, were active, responsive, and did not show any signs of stress or disease such as excessive nasal discharge, difficulty breathing, wounds, or postural abnormalities.

In addition, body temperature measurements were also taken as an indicator of possible infection or inflammation. All examined cattle had body temperatures within the normal range, between 37.5°C and 39.3°C (Asmarasari *et al*., 2023). No cattle were found with body temperatures exceeding the fever threshold, thus concluding that there were no clinical indications of fever or acute infection. The results of this examination indicated that all cattle were healthy and fit for slaughter. This decision aligns with the Minister of Agriculture's regulation on Requirements for Ruminant Slaughterhouses, which states that animals showing clinical signs of health can be approved for slaughter. With no physical abnormalities or abnormal body temperatures found, all examined cattle were cleared for slaughter. This demonstrates that the antemortem inspection at the slaughterhouse was conducted according to procedure and supports the food safety quality assurance system for the meat produced.

The results of antemortem observations from June 13 to 19, 2025, at the Dimoro Slaughterhouse in Blitar City showed that Limousin cattle were the most widely cultivated and utilized by livestock breeders in the Blitar region. This is in line with the statement (Trisman *et al*., 2022) that more than 1.8 million livestock households raising beef cattle in East Java prefer to raise crossbred cattle such as Limousin for reasons of higher economic value. Furthermore, as many as 9 FH cattle, 13 Simmental cattle, and 18 Limousin cattle were also not found in one week of slaughtering beef cattle at the Dimoro Slaughterhouse. This is likely due to the lower interest in Ongole Crossbred (PO) and Madura cattle in Indonesia compared to imported breeds such as Limousin and Simmental. This is caused by several main factors, including differences in meat productivity, market preferences, and the direction of livestock policies (Smith *et al*., 2018). In addition, the government program through artificial insemination (AI) tends to use more frozen semen from European bulls, such as Limousin and Simental, which has an impact on the decline in the local cattle population (Sutarno and Setyawan, 2015).

The slaughter of productive female cattle in slaughterhouses continues despite being prohibited by the Minister of Agriculture Regulation (Permen) and Law Number 41 of

2014. Research in Jambi Province shows an increasing trend in the slaughter of productive female cattle by an average of 9% per month, with a percentage increase of 20.9% per month (Aritonang, 2017). Legally, Law No. 41/2014 Article 18 (4) prohibits the slaughter of large productive female cattle, and Article 86 regulates criminal sanctions: 1–3 years in prison and a fine of IDR 100–300 million, according to Ediyanto (2018). Although the law prohibits the slaughter of productive female cattle, the practice still occurs in Jambi Province. This is caused by increasing demand for beef, a decline in the beef cattle population, weak supervision, and low public legal awareness. Data shows that the number of productive female cattle slaughtered continues to increase from year to year. In addition to economic factors, the lack of firmness in law enforcement also exacerbates this condition. As a result, productive female cattle are still slaughtered, even though only those no longer capable of breeding should be slaughtered. Antemortem observations at the Dimoro slaughterhouse also found females being slaughtered. Most of the females slaughtered at the Dimoro slaughterhouse were FH cattle that were no longer productive or had been culled.

The slaughter of female cattle at slaughterhouses is permitted provided they meet the requirements stipulated in Law Number 18 of 2009 concerning Animal Husbandry and Animal Health. Female cattle that may be slaughtered are those that meet certain criteria, including being over eight years old or having given birth more than five times. Furthermore, cattle declared unproductive (majir) by a veterinarian or reproductive engineering control assistant under the supervision of a veterinarian may also be slaughtered. Slaughter is also permitted if the cattle have been in a serious accident, suffer from a genetic defect that can be passed on to their offspring and is therefore unsuitable for breeding, or suffer from a contagious disease that, according to a government veterinarian, must be killed or slaughtered conditionally to eradicate and prevent the spread of the disease, as well as if the cattle have a life-threatening illness. Furthermore, uncontrolled cattle that endanger human safety may also be slaughtered in accordance with applicable regulations.

Conclusion

Based on observations and analysis of antemortem inspections of beef cattle at the Dimoro slaughterhouse in Blitar City, it can be concluded that antemortem inspections are conducted through clinical examinations of the animals prior to slaughter. During the inspection process, no pathological conditions were found in the cattle slaughtered at the Dimoro slaughterhouse in Blitar City. Therefore, the implementation of antemortem inspections at this slaughterhouse has been running well and supports efforts to ensure the safety and suitability of meat for public consumption.

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