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PERCENTAGE OF ELIGIBILITY OF BALI CATTLE LIVER (*BOS SONDAICUS*) DURING THE 2025 EID AL-ADHA THROUGH POSTMORTEM EXAMINATION IN DANGIN PURI KELOD VILLAGE, DENPASAR CITY

Persentase Kelayakan Hati Sapi Bali (*Bos sondaicus*) pada Hari Raya Idul Adha 2025 Melalui Pemeriksaan Postmortem di Desa Dangin Puri Kelod, Kota Denpasar

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Abstract

The celebration of Eid al-Adha as sacrificial worship is closely related to aspects of animal health and the safety of animal-derived food, as its implementation requires compliance with animal health and welfare principles, as well as assurance of meat suitability for public consumption. The increasing number of sacrificial animals each year necessitates greater attention to animal health to ensure food safety for the community. The liver of Bali cattle (*Bos sondaicus*) is an important indicator of the overall health of the body. This study aimed to determine the percentage of suitability of Bali cattle livers from sacrificial animals during Eid al-Adha through postmortem examination in Dangin Puri Kelod Village, East Denpasar District, Denpasar City, Indonesia. The study employed an observational method with a cross-sectional study design, involving 28 Bali cattle liver samples (total sampling). Examinations were conducted using inspection, palpation, and incision methods, with assessment parameters including color, shape, consistency, odor, and lesions. The results showed that 27 samples (96%) were normal and suitable for consumption, while one sample (4%) was abnormal and deemed unfit for consumption. These findings indicate that the majority of sacrificial Bali cattle livers in Dangin Puri Kelod Village met the ASUH standards (Safe, Healthy, Wholesome, and Halal). Continuous post-mortem examinations are necessary to ensure food safety and protect public health.

Keywords: ASUH, Bali cattle, Eid al-Adha, liver, postmortem examination.

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Abstrak

Perayaan Idul Adha sebagai ibadah kurban memiliki keterkaitan erat dengan aspek kesehatan hewan dan keamanan pangan asal hewan, karena pelaksanaannya menuntut pemenuhan prinsip kesehatan dan kesejahteraan hewan serta jaminan kelayakan daging bagi masyarakat. Peningkatan jumlah hewan kurban setiap tahun menuntut perhatian terhadap aspek kesehatan hewan guna menjamin kelayakan pangan bagi masyarakat. Organ hati sapi bali (*Bos sondaicus*) menjadi indikator penting karena mencerminkan kondisi kesehatan tubuh secara keseluruhan. Penelitian ini bertujuan untuk mengetahui persentase kelayakan hati sapi bali hasil kurban pada Hari Raya Idul Adha melalui pemeriksaan postmortem di Desa Dangin Puri Kelod, Kecamatan Denpasar Timur, Kota Denpasar. Penelitian ini menggunakan metode observasional dengan rancangan *cross-sectional study*, melibatkan total 28 sampel hati sapi bali (total sampling). Pemeriksaan dilakukan dengan metode inspeksi, palpasi, dan insisi dengan parameter penilaian meliputi warna, bentuk, konsistensi, bau, dan jejas. Hasil penelitian menunjukkan bahwa sebanyak 27 sampel (96%) dinyatakan normal dan layak dikonsumsi, sedangkan 1 sampel (4%) tidak normal dan dinyatakan tidak layak konsumsi. Hasil ini menunjukkan bahwa sebagian besar hati sapi bali kurban di Desa Dangin Puri Kelod memenuhi standar ASUH (Aman, Sehat, Utuh, dan Halal). Pemeriksaan postmortem perlu terus dilakukan untuk menjamin keamanan pangan dan kesehatan masyarakat.

Keywords: ASUH, hati, Idul Adha, postmortem, sapi bali.

INTRODUCTION

Eid al-Adha is an Islamic holiday that commemorates Prophet Ibrahim's obedience to Allah SWT and is marked by the ritual of animal sacrifice. Sacrificial animals are certain livestock, such as cows and goats, which are slaughtered as a form of worship to draw closer to Allah SWT. The observance of Eid al-Adha holds significant importance in the ritual of animal sacrifice, as this act of worship underscores the values of sincerity, piety, and social consciousness in Islam. It is not the physical attributes of the sacrificial animals, such as their flesh and blood, that reach Allah SWT, but rather the faith and sincerity of those who perform the act of worship (Azizah & Fauzi, 2021).

The increase in the implementation of qurbani has resulted in an increase in the number of animals slaughtered, including in Denpasar. Based on data from the Denpasar City Agriculture Office (2024), the number of qurbani animals slaughtered reached 3,078 cows and goats, an increase compared to 2023, which recorded 2,439 animals slaughtered. Dangin Puri Kelod Village, located in East Denpasar District, has a high population density and a large Muslim population; therefore, the slaughter of sacrificial animals is carried out routinely every year. This condition requires attention to the health aspects of sacrificial animals, especially Balinese cattle (*Bos sondaicus*), which are widely used in these rituals. The liver is a vital organ that plays an important role in the body's metabolism and can reflect the overall health of the animal; therefore, postmortem examination of the liver of cattle is an important step to ensure that the products distributed to the community are safe and fit for consumption.

Bali cattle are one of Indonesia’s indigenous cattle breeds, and are well known for their high adaptability to tropical environments, as well as their high productivity as a source of beef (Astiti, 2018). Despite these advantages, Bali cattle remain susceptible to various health disorders, particularly those affecting the liver, which is vulnerable to parasitic infections such as fascioliasis. Fasciolosis is a hepatic disease of ruminant livestock caused by trematode worms of the genus *Fasciola*, including *Fasciola gigantica* and *Fasciola hepatica*, which are commonly transmitted through contaminated forage and drinking water (Purwono, 2019). In line with the Indonesian government’s efforts to ensure that animal-derived food products

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comply with the principles of being safe, healthy, wholesome, and halal (ASUH), postmortem examination of sacrificial cattle livers is critically important, particularly during the Eid al-Adha period (Luthfi *et al.*, 2022).

Therefore, this study was conducted to obtain data on the percentage of Bali cattle slaughtered during Eid al-Adha 2025 in Dangin Puri Kelod Village, East Denpasar District, Denpasar City, as a basis for animal health surveillance and public health protection.

RESEARCH METHODS

Animal Ethics Clearance

This study did not require ethical clearance because it did not use live animals or test animals but rather used the livers of Balinese cattle that had been slaughtered for religious purposes without any intervention on the animals.

Study Object

The study used liver samples from 28 sacrificial cattle slaughtered at several slaughterhouses in Dangin Puri Kelod Village, East Denpasar District, Denpasar City. The total number of cattle slaughtered was 28; therefore, the data in this study were sampled.

Study Design

This study used an observational cross-sectional study monitored and described the physical condition of the livers of Bali cattle (Bos Sondaicus) sacrificed during the Eid al-Adha celebrations in 2025 in Dangin Puri Kelod Village, East Denpasar District, Denpasar City, without any treatment or experimentation. Using this method, the study directly observed the samples and described the condition of the cattle liver based on postmortem examination standards. Data were collected and recorded systematically and then analyzed descriptively to ensure that the results of the analysis were comprehensive and accurate.

Study Variables

The study variables in this study consist of independent variables, control variables, and dependent variables. The independent variable was Balinese cattle sacrificed on Eid al-Adha in Dangin Puri Kelod Village. The control variable was cattle that met the requirements for sacrificial animals. The dependent variables were color, shape, smell, texture, and consistency.

Data Collection Method

The number of samples taken in this study was 28, as determined by the panelists using the purposive sampling technique. Sampling was performed at seven slaughterhouses, as shown in Table 1. The seven locations are in the Dangin Puri Kelod Village area in the East Denpasar District of Denpasar City. The observed variables included shape, color, consistency, smell, and bruises, as shown in Table 2.

Data analysis

Data analysis was conducted using quantitative descriptive methods. A total of 28 Balinese cow livers were assessed based on five criteria: shape, color, consistency, lesions, and odor. These five criteria were then classified into four categories of final postmortem decisions: fit for human consumption, fit for consumption after special treatment, fit for consumption if unfit parts were discarded, and rejected for human consumption. The data obtained from the panelists' examination results were calculated as percentages for each category.

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RESULTS AND DISCUSSION

Results

This study consisted of five data points, namely the results of examinations of color, shape, odor, lesions, and consistency, as well as the final results of the postmortem examination of sacrificial Bali cattle livers in Dangin Puri Kelod Village, East Denpasar District, Denpasar City in 2025, which are presented in Table 3. Based on these examination results, 27 Bali cattle liver samples were declared normal and one sample was declared abnormal. The final postmortem examination decision showed that all samples declared normal were fit for human consumption, whereas the one abnormal sample was rejected for human consumption.

Discussion

The final decision on the post-mortem examination of sacrificial cattle livers is based on the Veterinary Public Health Directorate Guidelines, which classify the examination results into four categories: fit for human consumption, rejected for human consumption, fit for human consumption after the unfit parts have been removed, and fit for human consumption after undergoing special treatment in the form of heating. This decision aims to ensure the safety of animal-derived food and prevent the distribution of products that could potentially endanger public health in the future. If the abnormalities found are local and not systemic, the damaged parts of the organ can be discarded, whereas the healthy parts can be utilized. If severe tissue damage or damage that could potentially pose a health risk is found, the organ must be rejected and destroyed in accordance with the applicable sanitation and biosecurity procedures (Ministry of Agriculture of the Republic of Indonesia, 2020).

Based on the results of examining samples of Balinese sacrificial cattle livers in Dangin Puri Kelod Village, East Denpasar District, Denpasar City, as shown in Table 3, 27 (96%) samples of sacrificial cattle livers were declared normal and fit for human consumption, while one (4%) other sample was declared abnormal. The final postmortem decisions for the abnormal samples are shown in Table 4, and the percentage of final postmortem decisions for sacrificial cattle livers in Dangin Puri Kelod Village, East Denpasar District, Denpasar City in 2025 are shown in Table 5. The high percentage of Bali cattle liver suitability indicates that, in general, the health of sacrificial animals is good. This is in line with the characteristics of Bali cattle, which have high adaptability to tropical environments and are relatively resistant to health disturbances when raised with good management (Astiti, 2018).

Rejected liver samples showed abnormalities in the form of necrosis, accompanied by changes in tissue consistency, which became softer in certain areas. Liver necrosis is a pathological condition that indicates hepatocyte death due to blood circulation disorders, parasitic infections, toxins, or prolonged inflammatory processes. This condition can impair the liver's function as a detoxification and metabolic organ; therefore, the consumption of livers with necrosis has the potential to cause negative health effects in humans (Purwono, 2019). Therefore, rejecting these liver samples is the right action to prevent health risks to the community receiving the sacrificial meat.

The decision to condemn livers affected by necrosis is also closely related to public health protection, as damaged hepatic tissue can serve as a medium for the growth of pathogenic microorganisms and a site for the accumulation of metabolic toxins. Several studies have reported that necrotic liver tissue carries a risk of contamination with pathogenic bacteria, such as *Salmonella* spp., *Clostridium* spp., and *Escherichia coli*, which may cause gastrointestinal disorders and foodborne intoxication in humans (Grace *et al.*, 2015). Furthermore, as the primary organ responsible for detoxification, the liver has the potential to retain toxin residues

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and parasitic metabolites that may not be fully inactivated through cooking, thereby increasing the risk of adverse health effects if consumed (World Health Organization, 2005).

The high percentage of Bali cattle livers deemed fit for consumption indicates that the implementation of post-mortem inspection of sacrificial animals in Dangin Puri Kelod Village was carried out in accordance with veterinary public health standards. This finding supports the application of the principles of Safe, Healthy, Wholesome, and Halal (ASUH) in the provision of animal-derived food products, particularly during Eid al-Adha. Therefore, the results of this study underscore the important role of post-mortem inspection in ensuring food safety, protecting public health, and supporting animal-based food security by distributing high-quality and safe products for consumption.

CONCLUSION AND SUGGESTIONS

Conclusion

Based on this study, the percentage of Bali cattle (*Bos sondaicus*) livers that were fit for consumption on Eid al-Adha in Dangin Puri Kelod Village, East Denpasar District, Denpasar City, as determined by postmortem examination, showed that 96% of the livers were fit for consumption because they met the five examination criteria with normal results. Meanwhile, 4% of the livers were deemed unfit for consumption due to necrosis and changes in consistency, which made them softer. Overall, the results of this study are favorable, reflecting the health condition of the livestock and the adequacy of the examination before consumption by the community.

Suggestions

It is recommended to continue conducting postmortem examinations under the supervision of a veterinarian on Eid al-Adha and other holidays that use animal products as a means of celebration. These examinations aim to improve the suitability of carcasses and offal for human consumption. In addition, this effort supports more effective supervision of animal product safety so that food safety and public health can be guaranteed.

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Tables

Table 1. Distribution of sampling data

Location	Population size	Number of samples collected
Nurut Taqwa Mosque	4	4
Darul Huda Mosque	8	8
Al-Muttaqin Prayer Hall	3	3
Al-Iman Prayer Hall	2	2
Tawakkal Prayer Hall	2	2
Darussalam Prayer Hall	5	5
Cahaya Harapan Prayer Hall	4	4
Total	28	28

Table 2. Observed variables

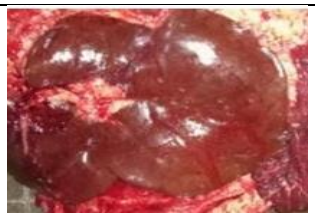
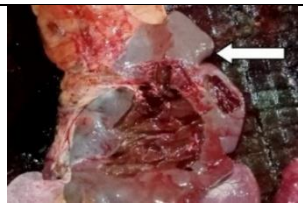
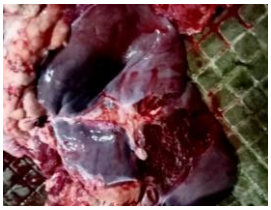
Examination criteria	Normal	Abnormal
Shape	 Solid, round or oval shape with a smooth surface (Source: Ainussani *et al.*, 2024)	 Liver enlargement in cattle infected with *Fasciola* sp. (Source: Ainussani *et al.*, 2024)
Color	 Chocolate brown or bright red (Source: personal documentation)	 Pale brown coloration (Source: Ainussani *et al.*, 2024)
Consistency	Flexible, smooth, elastic, and firm	Hardened and uneven
Odor	Fresh blood odor, characteristic smell of fresh liver	Fishy, pungent, rancid, or foul odor
Lesions	Bile imbibition, hyperemia, and mild fatty change	Necrosis, hepatitis, abscesses, and cirrhosis

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Table 3. Results of sample examination and final post-mortem decisions of sacrificial Bali cattle livers in Dangin Puri Kelod Village, East Denpasar District, Denpasar City, 2025

No.	Color	Shape	Odor	Lessions	Consistency	Final post-mortem decision
1.	N	N	N	N	N	A
2.	N	N	N	N	N	A
3.	N	N	N	N	N	A
4.	N	N	N	N	N	A
5.	N	N	N	N	N	A
6.	N	N	N	N	N	A
7.	N	N	N	N	N	A
8.	N	N	N	N	N	A
9.	N	N	N	N	N	A
10.	N	N	N	N	N	A
11.	N	N	N	N	N	A
12.	N	N	N	N	N	A
13.	N	N	N	N	N	A
14.	N	N	N	N	N	A
15.	N	N	N	N	N	A
16.	N	N	N	N	N	A
17.	N	N	N	N	N	A
18.	N	N	N	N	N	A
19.	N	N	N	N	N	A
20.	N	N	N	N	N	A
21.	N	N	N	N	N	A
22.	N	N	N	N	N	A
23.	N	N	N	N	N	A
24.	N	N	N	N	N	A
25.	N	N	N	N	N	A
26.	N	N	N	N	N	A
27.	N	N	N	N	N	A
28.	AN	AN	AN	AN	AN	B
Total	N: 27 AN: 1	N: 27 AN: 1	N: 27 AN: 1	N: 27 AN: 1	N: 27 AN: 1	A: 27 B: 1

Notes: N = Normal; AN = Abnormal; A = Approved for human consumption; C = Condemned (not suitable for human consumption).

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Table 4. Final post-mortem decision for abnormal samples

Musholla Darussalam		
Figure	Description	Final post-mortem decision
	1. Hepatic necrosis observed in cattle liver 2. Liver consistency was softer in necrotic areas	Condemned for human consumption

Table 5. Percentage of final post-mortem decisions for sacrificial Bali cattle livers in Dangin Puri Kelod Village, East Denpasar District, Denpasar City, 2025

Category	Number (n)	Percentage (%)
Approved for human consumption	27	96
Condemned for human consimption	1	4
Total	28	100

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