



## Postmortem Handling of Bali Cattle in Slaughterhouse Animal Kolaka District

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### Abstract

This research aims to learn, understand, and know the process of handling Bali cattle at the postmortem stage in animal slaughtering house Village Taho Village District Kolaka. The variables observed in this study consist of the general overview of the slaughterhouses Kolaka, a cutting technique at the animal Slaughterhouse of Taho Sub-district Kolaka District, and postmortem examination. Data obtained is then analyzed through a qualitative analysis approach and subsequently concluded. The result of this research is the origin of Bali cattle. The cattle that would cut an animal slaughterhouse came from Timbala, Pomalaa, Ladongi Mowewe, and Rate-rate. The sex of Bali cattle that enter the animal slaughterhouse Kolaka every day on average for the type of cow one tails/day, as well as the female calf Type 1 tail/day. Examination in postmortem in animal Slaughterhouse Taho Village District Kolaka Kolaka includes a lymph glandular analysis, meat and pH test of meat, meat color, liver examination, and lung screening. After an excellent cut to be marketed in an indication of 3 things, postmortem health screening is unconditionally permitted, permitted on the condition, or disposed of abnormal and not allowed, delayed, or refused to be exchanged.

**Keywords:** Bali cattle, animal slaughterhouse, Kolaka slaughterhouse, meat quality.

### A. Introduction

Livestock is one of the agricultural fields that produce meat commodities, milk, eggs, and its products and the results of the remainder of production. The development of farms to meet the needs, improve the community's prosperity and welfare, includes increased production and quality of products. Meat is known as one of the almost perfect food ingredients because it contains complete nutrition and is needed by the body, namely animal protein, energy, water, minerals, and vitamins (Juhari, Nuraini, & Cyrilla, 2017). Besides, the meat has a good taste and aroma, so almost all consumers like it.

Sapi Bali is one of the livestock producing sources of meat with a high economic value and essential means for people's lives. In addition to providing meat, cattle can also produce other ingredients such as manure, leather, bones, and so forth. The quality of beef is influenced by the genetic and environmental (nongenetic) factors of livestock before and after cutting (ante-and postmortem). Some studies report that ecological (nongenetic) factors affect the smoothing/quality of beef among other aged cattle at the time of the cut (Wulf, Tatum, Green, Morgan, Golden, & Smith, 1996). The Kastrasi of livestock (Martinez-Peraza, Belk, Tatum, & Smith, 1999), livestock health conditions when Cut (Gardner et al., 1999). The energy content in the feed given during fattening of cattle (Van Koevering, Gill, Owens, Dolezal, & Stasia, 1995), stress of livestock before being cut (Boleman, Boleman, Miller, Taylor, Cross, Wheeler, Koohmararie, Shackelford, Miller, West, Jhonson, & Savell, 1997), Livestock body fat content, and treatment during The process of carcasses after cutting (Koohmaraie, Shackelford, Wheeler, Lonergan, & Doumit, 1995).

The production of a good Balinese cow is a Bali cow that has a high percentage of carcasses. Giving a limitation on the outcome of good carcasses is not easy because each consumer has different tastes with each other, according to the demands of their flavors (Lawrie, 1995). The requirements of this taste from time to time the criteria can be variable, some avoid high-fatty meats, and some are also fun, and vice versa. Therefore, to obtain a good quality of beef and requiring management, feeding, and excellent handling also determines the superb quality of seedlings at the postmortem stage.

Postmortem handlers are intended to meet the terms or conditions that must be met in the slaughtering of livestock, aiming to obtain the desired quality of meat. The names of the slaughtering are: (1) The livestock of Bali cattle has been through the examination stage of antemortem and expressed healthy based on the examination of the animal doctor or authorized officer, and (2) livestock are not in a state of fatigue or Employed. According to Nuraini, Hidayat & Yolanda (2018), the carcass percentage starts from the growth rate, which is indicated by the increase in body weight will affect the resulting weight cut

In connection with the above, it is necessary to research about the process of handling Bali cows at the postmortem stage in the animal Slaughter House Village Tahoa District Kolaka Kolaka. It can learn, understand, and know the process of managing to get the best quality of meat Bali.

## **B. Methodology**

### *1. Data collection types and techniques*

The data collected in this study consist of two types of data:

- a) Primary data, i.e., data obtained from field studies and interviews directly with employees of Slaughterhouse.
- b) Secondary data, i.e., data took from sources and literature that support this research.

Data collection is done through observation methods and interviews. The observation method is done by observing the process of handling the Bali cow postmortem stage. While the discussion involving some employees of Slaughterhouse village Tahoa Kolaka subdistrict.

### *2. Research Procedures*

The procedure of this research are:

1. Examination of lymph glandular, the review on the head, is an examination of the lips, mouth, and masseter muscles. This examination is a routine check done with average intensity every day. If an abnormality in the carcass can be consumed, further processed, or not (Soeparno, 1998).
2. The meat and pH test of meat, analysis of meat pH is the cattle that have been cut separated between the male and female (gender), after being split between the organ and meat and then carrying pH measurements with Using litmus paper.
3. The flesh color examination looks like the color of the beef that it has been separated skin whether the color of the meat is red evenly or not and whether there is a disorder in the flesh or not.

4. The liver examination is by separating the liver from the contents of the cow that is carried out by RPH officers assisted by veterinarians who served at the local service. Once the liver is felt, it is seen with the naked eye whether the liver has abnormalities.
5. Lung screening is done almost the same as the examination on the liver. It was looking and touching the lungs, whether there are abnormalities or not.
6. Sanitation is to observe the level of hygiene of slaughterhouses village Taha Kolaka subdistrict.

### 3. *Parameters of Research*

The parameters of this research consist of an overview of the animal slaughterhouse in Kolaka, cutting technique in an animal slaughterhouse Taha village Kolaka subdistrict, Postmortem screening.

### 4. *Data Analysis*

Data obtained in field studies are analyzed through a qualitative analysis approach and drawn conclusions.

## C. **Result and Discussion**

### 1. *Handling of the Kolaka Slaughterhouses*

#### a) Slaughtering and blood expenditure

The technique of slaughtering conducted in Slaughterhouse Kolaka is to use direct technologies and following Islamic sharia where cattle are ready to be cut down after one of the hind legs is snapped with a rope then pulled into The opposite direction of the head pull. After the cow collapsed, the four legs were tied together, and then the cow was slaughtered using a sharp knife that was previously prepared.

The process of blood production is done by letting cattle be slaughtered in place of cutting until the blood expenditure is completed. As explained by Soeparno (1998), two cattle are slaughtering in the Kolaka Slaughterhouses, namely (1) the direct cutting technique and (2) indirect cutting technique. The cut is immediately after the livestock is expressed healthy, and can be slaughtered on the neck by cutting the carotid artery and jugular vein and esophageal. Livestock Slaughtering house in an indirect means, cattle are cut after the Stunning and after cattle completely faint. The intention of the Stunning is (a) facilitate the implementation of livestock slaughtering, (b) so that the livestock are not tormented and avoid the risk of harsh treatment, and (c) for the quality of the skin and carcasses produced better, because, at the time of dropping, livestock is not Much more robust or unfolded hard objects, so that defects in the skin or bruises on the seminal carcass possible.

#### b) Transmission

Based on the research results, that in Slaughterhouse, Kolaka, at the stage of peeling, is using the peeling technology on the floor. After shooting cattle die, it is carried out the skin by making the slices long and straight downwards on the middle line of the chest, from the chin to the rectum and the cutting only close to the user and penis. Then, circular slices are made to back leg and front foot, after the skin is removed from the body toward the spine. It is the correct and appropriate procedure for the transmission of Islam.

The transmission of technic, according to Soeparno (1998), there are three ways, namely: (1) The transfer on the floor, (2) the transmission by hanging and, (3) The peeling using the machine. It begins by making long slices on the skin along the midline of the chest and abdomen. Then the slices are continued along the inner surface (medial) feet. The skin is separated from the ventral toward the back of the body.

#### c) Expenditure on the contents and separation of carcasses

The process of production of the contents is done by opening the pelvic cavity first by cutting between the muscles. The abdominal cavity is then opened by inserting a hand into the body cavity and then cutting the muscles that are nominal by using a sharp thin knife. After that, the stomach, heart, and lungs are removed from the body cavity. After the contents' production, the separation of carcasses is by using an ax and a reciprocal knife. Carcasses were separated from the head, Legs and materials are divided between front, back thighs, the separation of the breastbone, and the termination of the spine.

After slaughtering and livestock are entirely dead, it is done the process of preparing carcasses. The preparation of a typical carcass is done as modified by Swatland (1984), as follows: (1) separate the head from the body of the cattle, (2) do the head-over, (3) separate the four legs on the joints of the Canon Bone (Cannon), (4) Perform the body's transmission.

## 2. *Postmortem examination*

Postmortem examination is an examination of the health of the flesh after being cut mainly on the analysis of carcasses, lymph glands, head of the mouth, tongue, lips, and masseter muscles and examination of the lungs, heart, kidneys, liver, and spleen.

The health screening of cattle in RPH Kolaka at the postmortem stage is done on each livestock completed in the cut. The purpose of postmortem examination is to remove and detect abnormal parts and supervision when there is contamination by harmful germs to ensure that the circulated meat is still worth consuming. Postmortem tests conducted include:

### a) Examination of limfoglandula

Research conducted in animal slaughterhouses did not find any abnormalities and infections secondary to the surface of the Limfoglandula examination, which is the examination of the head. How to perform a lymph glandular test is the head of the skinned and tongue removed and released from the lower jaw, the inner and outer masseter in the exterior to see whether there is a sirtisercus. In contrast, the tongue is the culprit and see there are changes, LGL. Retropharyngeal, Sub Maxillaris, and Parotidea are split.

### b) Meat and pH test of meat

After the process of production of innards and the separation of carcasses is examined meat. Based on a result of research done, the cattle that in pieces often produce good meat that is a compact look flesh with red warmth evenly and moist and not, There have been abnormalities in meats such as swelling, watery bruises, and bleeding spots in the muscle. The pH test of meat used a litmus paper to find out the amount of pH. Based on research conducted in animal slaughterhouses, did not detect any abnormalities and infections secondary to the surface of Limfoglandula examination the head. How to perform a lymph glandular test is the head of the skinned and tongue removed and released from the lower jaw, the inner and outer masseter in the exterior to see whether there is a sirtisercus.

In contrast, the tongue is the culprit and see there are changes, LGL. Retropharyngeal, Sub Maxillaris and Parotidea have split the meat in the way. The first take a slice of beef and a piece of paper lacmus, then the litmus paper is placed on the Selah of the Flesh Approximately ( $\pm$ ) one minute and when the litmus paper changes color it is matched on the number of the litmus paper whether acidic or wet. The purpose of measuring the litmus paper is to determine the moisture content/base and acidity contained in the meat. The standard meat pH is 5.3-5.8.

### c) Flesh color

Based on research in Animal Slaughtering House, Kolaka beef has the right color that is bright red or bright, shiny, not pale, and not dirty. Physically elastic flesh, slightly stiff, and not mushy. If held still feels wet and not sticky in hand. In terms of beef aroma in Animal Slaughtering House, Kolaka is very typical (savory).

The color of the beef is a bright red color because it is considered a slice of quality meat compared to red meat in the dark. Good meat must be a fresh red, shiny, not pale, silky smooth, odorless acid, not rotten when baked in hand, and still feels the smoothness and fat are yellow. Many factors affect the color of meat, including feed, species, nationality, age, sex, stress (activity level), muscle type, pH, and oxygen. These factors can affect the primary determinant of the flesh color, i.e., the concentration of myoglobin meat pigment (Lawrie, 1995).

### d) Liver examination

Based on the research of liver examination in Kolaka animal slaughterhouse is the heart cut horizontally to divide the bile duct, then observed the liver, whether there are any discoloration, consistency, and deification as well as weakening degeneration. The spleen's examination is lengthened and stretched out, note the color and texture, whether there are ulcers or bleeding.

#### e) Lung screening

Lung examination in Kolaka animal slaughterhouse is a way that the lungs are felt there is no lump and cut transverse to see the presence of bleeding or dirt on the bronchus. Following the research has never been found in the presence of fatigue in the lungs. The lung is an essential organ of breathing. Its primary function is supplying oxygen that is used or burned in the body for energy and removing carbon dioxide from the body. Lung examination is the way the lung is felt, and there is no lump and then cut to see the presence of bleeding or dirt on the bronchus (Miller, Carr, Ramsey, Crockett, & Hoover, 2001).

### 3. Marketing

After the inspection of meat is completed. The meat was brought to the market with the decision of the test results postmortem. According to SK Mentan No. 413/Kpts/T.N. 130/7/1992, the beef can be circulated to the consumer and be healthy and safe. Meat can be distributed to consumers in good quality. The meat can be distributed to the consumer through a supervised place, and then the unworthy portion should be disposed of it.

After cleaning Animal Slaughtering House finished, the meat is transported to the market by car (pick up) that has been prepared. In the transport process, there is no special treatment to avoid meat to be contaminated by dirt contained in vehicles or other impurities (Boleman et al., 1997)

The results of the final inspection can be classified as:

- a) Carcasses and healthy organs are continued to market for public consumption.
- b) The carcasses and the suspicious body organs are held for a more careful examination.
- c) Diseased and abnormal parts locally should be sliced and removed while the rest can be forwarded to the general market.
- d) The carcasses, organs of the diseased, and abnormal body, in general, are removed.
- e) Carcasses and healthy organs that will be forwarded to the general market are given a "GOOD" stamp.

### 4. Sanitation

Sanitation activities in Kolaka Animal Slaughtering House conducted daily by Animal Slaughtering House officers after the cutting process is completed by separating liquid and solid waste. Liquid waste derived from the cutting chamber is over made at the shelter in the form of a bathtub. It accommodates some of the wastewater. In contrast, the solid waste is provided at the accommodation with a tilted angle cement floor so easy to clean. This announcement is made regularly every day, even to the cleaning at the farm's resting place before it is cut.

To Avoiding the pungent smell, it is cultivated to keep dry and clean on the slaughter, and dirt is not allowed to accumulate long ago.

Location, design, construction, layout (layout), and Animal Slaughtering House building facilities affect hygiene and sanitation conditions. Animal Slaughtering House locations should be carefully considered and planned, so the Animal Slaughtering House and slaughtering process are not polluted and pollute the surrounding environment. The building where the Animal Slaughtering House slaughtering process is divided into two separate areas, namely the gross area (ranging from the animal entrance to organ expenditure/vicinity) and infected area (after the production of innards until carcasses/meat is distributed). Animal Slaughtering House construction materials should generally be healthy, waterproof (not from wood), easy maintenance, and easy to clean and disinfect. Animal Slaughtering House's main facilities include water resources, electricity, roads, and waste processor installations. Water that meets the requirements of clean water should always be available in Animal Slaughtering House, which is 1000 liters for each cow/buffalo tail per day or 450 liters for each pig's tail per day. The light intensity in the chambers for inspection, especially at the animal health check-up (Antemortem examination) and the meat check (postmortem test) minimum 540 Luks, so that the examiner can detect and Distinguish small color changes in animals and meats (SNI, 1999).

## D. Conclusion

Before the first cut in the examination, such as examining antemortem (review before cutting) and postmortem examination (after-cutting examination), the need for analysis is to detect the disease that is in the livestock to be cut. In the review of Antemortem, when the cow is declared to pass the test to reduce not close the possibility of not carried out postmortem examination because it is more likely that the meat will be in the community is ASUH (safe,

healthy, intact and halal). Following the research in the field based on post mortem examination, it is an examination of Limfoglandula, the amount of pH of meat, the color of flesh, lung, and liver examination. The cutting handler in Animal Slaughtering House of Kolaka is done reasonably well. It is supported by proper animal slaughtering house sanitation and disciplined employees of the Animal Slaughtering House.

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