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ANIMAL WELFARE VIOLATIONS BY ENTREPRENEURS AFTER THE HARVESTING OF BROILER CHICKENS IN MATARAM CITY AND THE SURROUNDING AREAS

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ABSTRACT

The postharvest broiler chicken business in the city of Mataram and its surroundings is generally carried out by small entrepreneurs using simple technology, so they tend to ignore animal welfare. This research aimed to determine the number of postharvest animal welfare violations committed by broiler chicken businesses. The research was conducted in the city of Mataram and its surroundings and included in-depth observations and interviews with collectors and slaughter business groups. The study was performed via the cluster sampling method, whereas the identification of collectors and slaughter entrepreneurs was performed via the snowball and accidental sampling methods, respectively. The assessment of animal welfare practices was guided by 5 indicators, namely, free from thirst and hunger, free from feeling hot and uncomfortable, free from wounds, free from disease and illness, free from fear and suffering, and free to exhibit normal behavior and have normal experiences. The observation of violations focused on catching and packing methods (putting chickens in boxes), weighing methods, numbers of chickens in boxes, transportation time and duration, and protection of chickens in vehicles. Other concerns included the loading and unloading process, treatment of chickens in quarantine cages, quality of slaughter knives, placement of slaughtered chickens and live chickens, and the scalding process. The study revealed that postharvest animal welfare violations by broiler chicken businesses occurred during all these activities. The most serious violations occurred during catching, weighing, packing and unloading, and transporting chickens, as well as during the placement of live and slaughtered chickens.

Keywords: Animal Welfare, Broiler Chickens, Catching, Loading and Unloading, Transportation, Weighing,

1 INTRODUCTION

Broilers are the type of poultry that has the greatest contribution to national meat procurement. Broiler chicken meat production in 2023 reached 3,997,652.7 tons, while local chicken meat production reached only 280,725,797.2 tons, laying chicken meat production reached 165,874.2 tons, and duck meat production reached 49,267.4 tons (Ma'arif,

2020). Most of these types of poultry come from small breeders, who have little capital and practice simple management patterns. Business management for such entrepreneurs involves the use of labor and business capital as efficiently as possible to reduce production costs and increase profits. The result is that in the operation of the business, workers tend to be more concerned with completing tasks and neglect animal welfare.

The use of simple technology and limited human resources in the production process has implications for the risk of animal welfare violations in several postharvest activities, from the catching process to transportation to slaughter at a chicken slaughterhouse or chicken slaughtering location (Jayaprakash et al., 2016). Violations can occur when a chicken is caught and put into a box in a rough manner that harms the chicken (Cheng et al., 2019; Cockram & Dulal, 2018; Moreno et al., 2016). Moreover, a box density that exceeds capacity will decrease comfort, increase metabolic heat and trigger heat stress (Gonzalez-Rivas et al., 2020; Lalonde et al., 2021), cause muscle bruising, reduce carcass quality (Prakash & Prabakaran, 2020; Vinco et al., 2016), and potentially even increase mortality (Cockram et al., 2020; Cockram & Dulal, 2018).

To date, no study of animal welfare practices among postharvest entrepreneurs in broiler chicken businesses in the city of Mataram and its surroundings has been reported, and this research aimed to illustrate the practices carried out by businesses. It is hoped that the results of this research will provide initial and basic information for the implementation of improvements and the provision of guidance by various groups to businesses.

2 RESEARCH METHODS

2.1 Research type

This was survey research, namely, research conducted via interviews and direct observations at business locations.

2.2 Data source

The data sources in this research were collectors and cutters (butchers).

2.3 Location

Research was conducted in the city of Mataram and its surroundings by interviewing broiler chicken collectors and cutters.

2.4 Sampling method

The research location was identified via the cluster sampling method, which resulted in selection of the city of Mataram and its surroundings as the research location. Collectors and slaughter entrepreneurs were identified via the Snowball and accidental sampling methods, respectively.

2.5 Variables collected

The data collected in this research were as follows: 1). Characteristics of the respondents, as well as the implementation of animal welfare practices at various levels, were evaluated according to 5 indicators: 1). free from thirst and hunger, 2). free from heat and discomfort, 3). free from injury, disease and illness, 4). free from fear and suffering, and 5. free to exhibit normal and natural behavior. The targets for observation were the method of catching and packing chickens (putting chickens in boxes), weighing methods, density of chickens in boxes, transportation time and duration, protection of chickens in vehicles from sunburn and rain, loading and unloading practices, broiler treatment in quarantine cages, the quality of slaughter knives, the placement of slaughtered chickens relative to live chickens, and the scalding process or soaking of chickens in warm water.

2.6 Data analysis

The data obtained were tabulated and analyzed descriptively.

3 RESULTS AND DISCUSSION

The data in Table 1 show that chicken collectors and slaughterers (butchers) in the city of Mataram and its surroundings were dominated by individuals aged between 20 and 40 years (productive age). Broiler chicken business employees from both business components, on average, had high school and university educations, with 1-5 years of business experience. Only 16.7% of respondents who were involved in the collection business were non-Muslims, and there were no non-Muslim individuals involved in the slaughtering business (as butchers).

If these three characteristics are considered, broiler chicken business people in the city of Mataram and its surroundings were productive workers with standard/established characteristics who could easily adapt to new tasks and easily understand and use new technology. This is different for workers of nonproductive age, who have a low education level and less experience, and who find it difficult to adapt to the use of new technology and changes in the atmosphere, thereby affecting work productivity (Akpur, 2023).

The animal welfare violations identified before and immediately after broiler chickens were transported to the city of Mataram and its surroundings are presented in Table 2. The

Table 1: Respondent characteristics (age, education, experience, religion)

No	Characteristics	Business fields	
		Collector (n=18)	Butche (n=28)
1	Age (years):		
	<20	17,5	7,0
	20-29	27,5	54,0
	30-39	50,0	25,0
	40-49	5,0	11,0
	>50	-	3,0
	Total (%)	100	100
2	Education:		
	Elementary school	-	-
	Junior high school	-	-
	Senior high School	83.3	35.7
	Diploma/Bachelor	16.7	64.3
	Total (%)	100	100
3	Experience		
	<1 years	27.7	14.3
	1-5 years	55.5	60.7
	>5 years	16.8	25
	Total (%)	100	100
4	Religion		
	Islam	83.3	100
	Christian	-	-
	Catholic	-	-
	Hindu	16.7	-
	Buddha	-	-
	Confucian	-	-
	Total (%)	100	100

transportation of broiler chickens in the city of Mataram and its surroundings was carried out in open trucks, in which chickens were partitioned in boxes lacking protective equipment to prevent exposure to sunlight and rain. This type of transportation is commonly used on the island of Lombok, even in Indonesia (Tamzil et al., 2022). The use of this means of transport tends to violate animal welfare policies and greatly decrease the comfort of chickens, especially if transport is carried out during the day and during heavy rain. Under conditions such as these, chickens suffer from stress because metabolic changes, physiological changes, hematological changes, and hormonal changes in their bodies can lead to

death (Caffrey et al., 2017; Collier et al., 2019; Lambooi, 2024; Rashamol et al., 2018; Tamzil et al., 2021; Zhang et al., 2021). The use of this means of transportation should be evaluated (Tamzil et al., 2021), and the M-CLOVE conveyance (chicken transport vehicle), equipped with an air circulation regulator designed by the Bogor Agricultural Institute (IPB), should be developed and applied. Chickens transported via this means have a lower body temperature than those transported via conventional means do (Pratama et al., 2016).

This research also revealed that more than 50 percent 50% of the transportation process was carried out during the day with a relatively short travel time (a maximum of 1 hour). Transporting chickens during the day triggers excessive stress (Iftitah et al., 2022; Tamzil et al., 2021), which is characterized, among other things, by an increase in body temperature (Tamzil et al., 2022). The stress is a result of the accumulation of several stressors that appear simultaneously and are difficult to avoid. These stressors include solar radiation, heat stress, jostling positions, a lack of food and drinking water and vibration during transportation (Gou et al., 2021; Spector et al., 2019).

Research has revealed that some collector entrepreneurs still do not pay enough attention to the cleanliness of their transportation equipment (trucks). Vehicles are operated every day without cleaning them before use. These kinds of transport conditions have the potential to spread disease.

The data in Table 2 also show that there were serious animal welfare violations during the process of catching chickens on the cage floor, during weighing and during packing (when

Table 2: Identification of animal welfare violations before, immediately and after transporting broiler chickens in the city of Mataram and surrounding areas

No	Normal treatment standards (does not violate Animal Welfare)	Amount (%)	
		Normal actor	Offender
Before transportation (n=16)			
1	Fastening the chicken according to the provisions and not torturing the chicken (maximum 12 hours)	75	25
2	Catch the chicken carefully, don't be rough and hurt the chicken	0	100
3	Put the chicken into the weighing box carefully, and with the density of the chicken according to the capacity of the box	75	25
4.	The density of chickens in the transport box is in accordance with the carrying capacity	75	25
During Transport (n=18)			
1	Use a vehicle equipped with protective equipment from exposure to sunlight and rain	0	100
2.	Transport at the right time (not hot)	44	66
3.	Transport time is not too long	22	78
4.	Maintain cleanliness of boxes and transport vehicles	94	6
After transportation (n=28)			
1	The loading and unloading process is done carefully and does not hurt the chicken	0	100
2	Quarantine cages are available complete with supporting facilities	18	82
3	Rest the chicken before slaughtering it	100	0
4	Slaughtering using a sharp knife	100	0
5	Separation of places where live and dead chickens are slaughtered	0	100
6.	The scalding process is carried out in accordance with operational guidelines	32	68

Note: n= number of samples

chickens were put into transport boxes). Animal welfare violations also occurred during the loading and unloading process, when chickens were moved to quarantine cages (temporary shelter), and during scalding (immersion of

chickens in hot water after slaughter). The handling of chickens in all these processes was performed manually, without the use of tools to accelerate and simplify the process. Although the educational level of entrepreneurs was relatively good (high school and tertiary education), the employed workers were, on average, freelance workers (working on a contract basis) with an elementary school education or who had not finished elementary school. In pursuing the target volume of work, the catching process is carried out without considering the comfort and safety of the chickens.

When chickens were caught and placed in baskets for weighing, placed chickens in transport boxes, or transferred from transport boxes to quarantine cages, they were treated like nonbiological goods, namely, in a harsh manner; they were held by the neck, wings and legs. This kind of treatment can injure chickens, such as by causing broken wings, broken legs and necks accompanied by bruising of various parts of the muscles (Cockram et al., 2020; Poultry Service Association, 2017).

The boxes were filled with chickens beyond their capacity. Filling a box beyond its capacity causes suffering in the form of stress, fear and pain, and it prevents chickens from exhibiting normal and natural behavior. This kind of treatment can cause excessive stress, broken bones, and muscle bruising, and even death (Tamzil et al., 2022). Instead, boxes should be filled in accordance with their capacity so that the chickens do not pile up and so that they have adequate space to move around. The capacity must be adjusted to the volume of the box, the number and body weight of the chickens being transported and the duration of travel. The box can be filled using a basket guide with dimensions of 48,000 cm³ that can accommodate 30 kg of chicken (Ma'arif, 2020). If a chicken has an average weight of 1.5 kg, then a maximum of 20 chickens can be placed in one box. This kind of approach will allow chickens to not be stressed and have enough space to move (Park et al., 2022; Ulupi et al., 2018).

The majority of poultry entrepreneurs in the city of Mataram and its surroundings were classified as small entrepreneurs with a small scale of ownership and capital and used simple technology. In the process of catching, packing, and loading and unloading, workers used manual labor, without the help of high-tech equipment, so that in pursuing work completion targets, workers or laborers tended to commit animal welfare violations. In an effort to reduce the number of violations, innovation is needed to develop technologies that prevent injury to chickens while focusing on livestock comfort and efficiency during harvesting (Widyasari et al., 2021). Modern broiler farms have mechanical harvesters that use rubber-fingered rotors to transport chickens into cages or baskets (Ulupi et al., 2018). This reduces labor for harvesters and so streamlines and accelerates the harvesting of broiler chickens, thereby minimizing animal welfare violations (Lambooj, 2024; Ulupi et al., 2018).

Another type of animal welfare violation that was observed before transportation was that chickens were fasted for more than 12 hours, causing them to suffer from hunger. Long-term fasting is an indicator of animal welfare violations, namely, that livestock are not free from hunger. This kind of fasting occurs because the harvesting and transportation processes are not carried out simultaneously but are carried out in stages; that is, the remaining chickens in a cage are transported the following day. Chickens that are transported late are fasted for a relatively long period (potentially more than 24 hours). The effect is that chickens suffer from hunger for a long period of time, which results in a decrease in body weight, breast-meat weight (Englmaierová et al., 2021; Tůmová et al., 2022) and meat quality (Tamzil et al., 2022).

The data in Table 2 also show that very few slaughtering entrepreneurs had quarantine cage facilities (temporary shelters before slaughter). Under normal weather conditions, the practice of placing broiler chickens carelessly before slaughter does not affect the comfort of the chickens and does not violate animal welfare practices. However, hot and rainy weather affects chicken metabolism and subsequently leads to heat or cold stress. Chickens were exposed to rain because they were placed around a house lacking a roof, which would block exposure to sunlight and rain. The effect was that broilers were not free from heat and cold stress, so chickens felt discomfort and were not free to exhibit normal and natural behavior. The emergence of practices such as this suggests that the incidence of animal welfare violations at the slaughter business level is very high because all respondents (slaughter businesses) implemented a quarantine process before slaughter.

In all the slaughtering businesses investigated, there were cases where dead, slaughtered chickens were placed with live chickens. That is, chickens that are still alive witnessed other chickens being slaughtered and die. Practices such as this violate animal welfare policies because the slaughtering place and the temporary shelter (quarantine cage) should be in separate locations so that live chickens do not witness the slaughter of other chickens.

Another practice that tends to violate animal welfare policies is the scalding process. The process of immersing a chicken in hot water is performed hastily before the chicken actually dies. This practice is considered torture because the chicken is alive, and the concern is that the chicken's death will not be caused by slaughter but rather by the effect of hot water.

4 CONCLUSIONS

Animal welfare violations by postharvest broiler chicken entrepreneurs occur in all processes. The most serious violations occurred during the catching, weighing, packing, and loading and unloading processes. Therefore, to reduce the number of animal welfare violations, it is necessary to provide guidance to poultry entrepreneurs and to initiate the provision of mechanical fishing and transport equipment that is less likely to result in animal welfare violations.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

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Disclosure of Conflict of interest

The authors declare no conflicts of interest regarding this manuscript.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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