

Application of SNI 99002:2016 Halal Slaughtering of Poultry at Agung Chicken Slaughterhouse (RPA)

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Abstract: The development of the chicken slaughtering industry or Chicken Slaughterhouse (RPA) has spread in several areas. The law regulates the guarantee of halal products in UU no. 33 tahun 2014. The law explains the guarantees for the provisions of halal product materials, the rights and obligations of halal product entrepreneurs, and how to obtain halal certificates. The awareness of the owner of the Agung Chicken RPA to improve the standard of the RPA and the ability to compete in the market prompted the need to fulfill the standard according to SNI and improve the carcass processing process at the Agung Chicken RPA. This study aims to make RPA Agung Chicken able to realize an increase in standards by meeting the criteria of SNI 99002:2016 regarding Halal Slaughter in Poultry. It also reduces the incidence of defective products in the processing of chicken carcasses. The research was conducted using the Define Measure, Analyze, and Improve stages approach. The define stage is carried out by defining the criteria from SNI 99002:2016 and explaining the types of defects found in the chicken carcass processing process. Then, the measuring stage is carried out by assessing what criteria need to be met by RPA Agung Chicken, also counting the number of defective products found in the carcass processing process. The Analyze stage is done by analyzing the criteria that need to be met by RPA Agung Chicken and analyzing the causes of defective products. After that, the Improve stage was carried out by outlining the proposals that needed to be implemented to comply with SNI 99002:2016 concerning Halal Slaughter in poultry. The conclusion is that RPA Agung Chicken has not implemented the 23 criteria set by SNI 99002:2016. Proposed actions that need to be implemented by RPA Agung Chicken in the form of implementing a halal assurance system which contains the appointment of a halal supervisor, preparation of RPA halal commitments and policies, preparation of supporting documents for the processing process from chicken acceptance to carcass packaging, and preparation of the management team structure. In addition, it is necessary to prepare and carry out processing stages according to SOPs and scheduling repairs of feather removal machines.

Keywords: Indonesian National Standard, Chicken Slaughterhouse, Halal Slaughter, Defect, DMAI

1. Introduction

The level of chicken meat production for public consumption in Central Java Province experienced an increase in 2019. The amount of production in the previous year, in this case, was known to be 543,754.32 tons, increasing to 681,384.13 tons in 2019 (BPS, 2019).

Most Indonesian people are sensitive to a food products. One of them is the clarity of its *halalness* which is the basis for consideration in responding to the era of globalization, especially for the Islamic community. In addition, the quality of *halal* products is the reason for non-Muslims to use these products (Salleh and Khalid, 2016)

The law that regulates the guarantee of *halal* products is Law No. 33 of 2014. The law states guarantees for the provisions of *halal* product materials, the rights and obligations of *halal* product entrepreneurs, and how to obtain *halal* certificates. *Halal* can be defined as a quality standard that follows Islamic Shari'a law and is used in every activity of adherents of Islam (Bohari, et.al, 2013).

The development of the chicken slaughtering industry or Chicken Slaughterhouse (RPA) has spread in various regions. However, there are still many chicken slaughterhouse business actors who have not 100% cut perfectly, even chickens that died before being slaughtered (Etwin and Rony, 2017).

RPA Agung Chicken, which has been established in 2001, has not implemented a *halal* management system that guarantees the processing of chicken carcasses following *halal* criteria. This leads to a chicken processing process that does not have standards so that every process carried out does not guarantee the entire chicken processing is *halal* and *tayyib*. There are still activities that are not following *halal* slaughtering standards in chicken slaughtering activities at Agung Chicken RPA, such as poor chicken selection, imperfect incisions, and ineffective processes.

Awareness of the owner of the Agung Chicken RPA to improve the standard of the RPA and the ability to face market competition is very necessary to meet the standards according to SNI and to improve the carcass processing process at the Agung Chicken RPA. Thus, the DMAI method approach that uses a gradual discussion is expected to be able to realize the wishes and efforts to improve these standards and improvements.

2. Research Method

The method used in this research is explained in this section. This research consists of the stages of initial identification, data collection and processing, analysis of interpretation of results, and conclusions.

2.1 Initial Identification Stage

At this stage, observations and identification of problems in chicken slaughtering activities and conditions in the Chicken Slaughterhouse were carried out. The next stage is to conduct a literature study related to the chicken slaughterhouse business, the DMAIC method, and SNI 99002:2016 *halal* slaughter in poultry. The next step is to determine the formulation of the problem, the objectives and benefits of the research, and the setting of research boundaries.

2.2 Data Collection and Processing Stage

This stage describes the application of the DMAI method.

The Define stage is carried out by defining the criteria of SNI 99002:2016 related to *halal* poultry slaughter. These criteria contain important aspects that need to be applied by the company to ensure the entire production process in carrying out the *halal* aspect and documents that need to be prepared by RPA. This stage is followed by an explanation of the definition of defects that may arise in slaughtering chickens at RPA Agung Chicken

The Measure stage on the other hand is carried out to assess the criteria applied by RPA Agung Chicken by referring to SNI 99002:2016 regarding *halal* cuts using a checklist sheet. This stage is followed by observing the process carried out using a table for calculating the number of defective products. Observations were made 6 times where the total product inspected was 100. Identification was also carried out at this stage regarding the profile and knowledge of workers related to *halal* slaughter.

The Analyze stage is the stage of analyzing the application of the SNI 99002:2016 standard regarding *halal* slaughter in poultry which is applied by Agung Chicken Slaughterhouse. In addition, an analysis of the causes of defects that arise in carcass production activities is also investigated. Understanding the causes of disability is done through brainstorming and discussions with RPA owners and workers. In this stage, the

Root Cause Analysis tools in the form of the 5Whys method are used to find out the root cause of each defect that arises.

The Improve stage is carried out to describe the proposals that can be given to the improvement of the Agung Chicken RPA standard based on SNI 99002:2016, fulfillment of documents according to SNI, and improvement of the production process to reduce defective products.

2.3 Conclusion Stage

This stage explains the conclusions obtained from the research results. The conclusions obtained are broadly related to the extent to which the application of business standards for chicken slaughterhouses is following SNI 9902:2016, more precisely regarding the *halal* slaughter of poultry. In addition, the proposed improvements that should be implemented by the Chicken Slaughterhouse based on the conditions and wishes of the RPA owner are also explained at this stage.

3. Finding and Discussion

This section describes the results and discussion of the research, along with a description of each stage of DMAI used which is as follows:

3.1 Define

This stage aims to define several aspects that are the subject of research. The fulfillment of the criteria is matched according to SNI 99002:2016 regarding *halal* slaughter in poultry. There are a total of 12 main clauses with a total of 61 criteria. The following is an explanation of the number of criteria for each clause:

Table 1. Number of Criteria for each clause

Clause	Total
Organization	5
Purchase	3
Transportation	4
Pre Slaughter	15
Post-Slaughter Handling	9
Packaging and Labeling	3
Storage	3
Transportation	2
Facility	3
Handling non- <i>halal</i> products	3
Traceability	2

It was found defects related to poor quality were based on field observations. Defects are defined as products that do not meet the *halal* and *tayyib* aspects. *Halal* in this case means that it is following Islamic law (LPPOM MUI, 2008), while *toyyib* means suitable for consumption (Pahlawan & Vanany, 2019) which is strengthened by the quality standards set. The following is a list of defects found in the processing:

Table 2. Product Defects

Process	Defects
Chicken Acceptance Process	-Chicken feathers are not intact - The color of the comb is not fresh red.
Slaughtering Process	- There is a channel in the gullet that has not been cut off fully
Feather Removal	- Some feathers are not completely pulled out - There is a red carcass

3.2 Measurement

This stage is carried out to provide data in the form of numbers or facts to assess the extent to which the desired aspects can run. The assessment is carried out on the implementation of the *halal* cutting criteria according to SNI 99002:2016 regarding *halal* cutting. The following table describes the extent to which Agung Chicken Slaughteringhouse meets the requirements of the SNI.

Table 3. Assessment of SNI criteria fulfillment

Clause	Total Number	Fulfilled	Not fulfilled
Organization	5	3	2
Purchase	3	1	2
Transportation	4	3	1
Pre Slaughter	15	6	9
Slaughter	9	7	2
Post-Slaughter Handling	9	3	6
Packaging and Labeling	3	1	2
Storage	3	1	2
Transportation	2	2	0
Facility	3	3	0
Handling non-halal products	3	2	1
Traceability	2	0	2

The next stage is to calculate the number of defective products in the chicken carcass processing. The calculation results are presented in Table 4.

Table 4. Calculation of product defects

Process	Defects	CTQ	I		II		III		IV		V		VI		Total	
			Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Receipt when purchasing	Chickens do not pass ante-mortem inspection	Chicken feathers are not intact	6	14	4	16	2	13	3	12	4	11	6	9	25	75
		Combs is not fresh red	3	17	2	18	3	12	4	11	4	11	3	12	19	81
Slaughter	Does not meet cutting standards	There is a channel in the gullet that has not been cut off fully	1	19	2	18	2	13	2	13	1	14	2	13	10	90
Feather removal	Imperfect feather removal	Some feathers have not been pulled out	3	17	5	15	5	10	3	12	7	8	5	10	28	72
		There is a blood-red carcass	1	19	0	20	1	14	0	15	0	15	0	15	2	98

3.3 Analysis

Referring to the results of the assessment based on the criteria of SNI 99002:2016 regarding *halal* slaughter in poultry, several criteria have not been met by the Agung Chicken Slaughterhouse as follows:

In the organizational category, the company has not met the 2 standard criteria set, such as not having implemented a *halal* management system so that the organizational commitment to implementing a *halal* management system as a whole cannot be determined. In addition, the company is also known to have not implemented the criteria in the form of determining the requirements for poultry farming following the laws and regulations where there is no documented list of information regarding farms that supply poultry. So far, RPA has only made orders via *Whatsapp* to farmers.

In the category of live poultry transportation, the organization has not confirmed whether the criteria for the poultry transported are healthy or not because there is no relevant documentary evidence applied by Agung Chicken Slaughterhouse in this regard.

In the category of receiving poultry, it was found that the Agung Chicken Slaughterhouse had not yet ensured that all received birds had undergone a visual inspection by competent personnel. The company also has not taken any action to prevent stressed poultry and indications of illness. The treatment so far has only been applied to chickens found dead in shelters. The company does not pay much attention to poultry activities that are indicated to be stressed / sick. This Slaughterhouse has not documented the number and weight of all live birds received the time of arrival and the name of the breeder. In the category of antemortem examination, Agung Chicken Slaughterhouse has not yet determined its inspection procedures on poultry to be slaughtered. This inspection is necessary to ensure the quality of the chicken to be slaughtered. Agung Chicken Slaughterhouse has only carried out a quick visual inspection of the appropriate size of the chicken, but not with the established quality standards of the chicken.

In the purchasing category, Agung Chicken Slaughterhouse has not implemented Pre Slaughter: Handling just before slaughter. The criteria that have not been implemented in this category is that the slaughterer does not yet have the skills to position the poultry correctly during slaughter, resulting in bruises on the chicken carcass. Responding to this problem, of course, it is necessary to set standards and supervision that ensure the slaughtering process is as determined.

The slaughtering category which is the next stage is the most important aspect that ensures the carcass meets the *halal* qualifications and is of good quality. The butcher must ensure that the three channels are perfectly cut and do not break the collarbone. At the time of observation, some carcasses were still found whose esophagus had not been completely cut off. This will cause the carcass produced to not meet the *halal* and *toyyib* aspects according to SNI. In addition, the supervision of the *halal* supervisor at the Agung Chicken Slaughterhouse was also not found.

The criteria that have not been implemented in the post-slaughter handling category is to ensure that the slaughter is under the supervision of a *halal* supervisor. Since this category has not yet been implemented, it cannot be ascertained whether the poultry is completely dead when it is put into the boiling drum. The feather removal process is also recommended to be done thoroughly. The postmortem examination process after the slaughter process in this case also needs to be carried out. The Chicken Slaughterhouse must ensure that the handling process for slaughtering chickens is in a hygienic condition. This can be done by doing regular cleaning and disposing of waste in a good sewer. Lastly, Chicken Slaughterhouse has not documented the post-slaughter handling process as an evaluation and tracking effort.

In the category of packaging and labeling, this chicken slaughterhouse should use materials that are not contaminated with impure where the packaging process at this Chicken Slaughterhouse has not been carried out in a clean and hygienic area. The packaging location is still in one room for cleaning offal which allows dirt/bacteria to stick to the carcass. In addition, the packaging used does not meet the laws and regulations. Currently, packaging only uses plastic bags for easy distribution.

The criteria that have not been implemented in the storage category are that poultry storage is only allowed to stand at room temperature. This causes the slaughtered chicken to have the potential to be exposed to bacteria. There has been no preparation of product storage record documents. This Chicken Slaughterhouse does not yet have a document to recap the results of chicken processing. This document needs to be compiled to facilitate company records in the future.

Table 5. Analysis of Chicken Defects Causes

Defects	Why?	Why?	Why?	Why?	Why?
Chicken feathers are not intact	Chicken reception not done well	The chicken that came was not in a completely healthy condition	No detailed inspection of the chickens that came	Workers do not understand the characteristics of a good chicken	There is no procedure for receiving chickens from the chicken farmers
Combs is not fresh red	Chicken reception not done well	The chicken that came was not in a completely healthy condition	No detailed inspection of the chickens that came	Workers do not understand the characteristics of a good chicken	There is no procedure for receiving chickens from the chicken farmers
There is a channel in the chicken's esophagus that has not been completely cut off	The slaughtering process is not perfect	Slaughter is not done by cutting to the base of the neck	No inspection after the slaughtering	Workers carry out the slaughtering step in a careless manner	There is no procedure for inspection after slaughter
There is a blood-red carcass	The chicken has not died when boiling	There is no checking regarding the condition of the chicken when it is put on the stove	Workers just pour directly the chicken from the barrel	There is no need to check the condition of the chicken	There is no procedure for inspection before boiling
Some feathers have not been removed	The feather removal process is not optimal	The condition of the rubber on the machine is not good	The condition of the machine has decreased due to continuous use	There is no periodic inspection of the machine condition	There is no regular schedule of machine maintaining

In the traceability category, the criteria that have not been implemented are the need for written procedures to ensure the traceability of *halal* products. RPA Agung Chicken has not compiled the document, so if a musty is found that is not following the provisions, will make it difficult to find the cause. This chicken slaughterhouse was also found to have no reference to written procedures to ensure traceability of the *halal* products produced.

Regarding the calculation of the number of defective products, several processing results were found that did not meet the standards. An analysis of the causes of disability is presented in table 5.

3.4 Improvement

Based on the description of the analysis, several improvements to the standard compliance are proposed as follows:

3.4.1 Planning and implementation of *Halal* Management System

The implementation of a *halal* management system is very important at Agung Chicken Slaughterhouse because this system will regulate the overall chicken processing process, both from the organization and technical implementation in the field. Thus, the chicken carcass processing process will be obtained which guarantees the overall *halal* aspect. *Halal* will also certainly affect the behavior of people who consume it. (Ainiyah, 2012).

3.4.2 Preparation of detailed SOPs for each process

The preparation of SOPs is carried out based on the collection of information and production process standards applied at Agung Chicken Slaughterhouse. This SOP is expected to be the basis for workers to carry out their production processes optimally. This SOP will explain in detail every step that needs to be carried out by workers, from receiving poultry to the packaging process so that the overall process can guarantee the fulfillment of *halal* standards and aspects.

3.4.3 Scheduling of feather removal machine repair

Based on an interview with the owner of Agung Chicken Slaughterhouse, the engine repairs carried out were in the form of repairs to the rubber used as a tool to pluck the feathers inside the machine. This tool is

only effective for a certain period. When the time limit has passed, the tool will experience denudation of the layers of the teeth, resulting in a completely clean feather removal process. Based on experience so far, it is known that the rubber needs to be replaced every 1 month.

4. Conclusion

Agung Chicken Slaughterhouse based on the findings of the research that has been carried out is known has not implemented the 23 criteria set by SNI 99002:2016 related to *halal* slaughter in poultry. This research also produces suggestions for actions that should be carried out by Agung Chicken Slaughterhouse to improve organizational standards and guarantee the *halal* processing process. These actions include the implementation of a *halal* assurance system that contains the appointment of a *halal* supervisor, preparation of Chicken Slaughterhouse *halal* commitments and policies, preparation of supporting documents for the processing process from chicken is received to carcass packaging, and the preparation of a *halal* management team structure. Furthermore, it is necessary to prepare and carry out processing stages according to SOPs and scheduling repairs for feather removal machines.

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