



The Maintenance Management of Broiler Chicken in Achieving Ideal Body Weight (Case Study in RRMC "Rural Rearing Multivication Centre " Puubunga, Indonesia)

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Abstract

The broiler chicken farm at RRMC has good maintenance management and feeding procedures. The productivity level of the livestock had been achieved and it meets the standard market weight of 2 kg for one maintenance period of 35 days. The shape of the coop in the RRMC is a semi-monitor whose coop location faces the rising sun, so the chicken can get direct morning sunlight. Preparation of the coop at the time of DOC comes is very important because the coop should be sterile from various seeds of disease. Whether it comes from fungi, viruses, bacteria and protozoa. In addition, during maintenance, employees must be diligent in controlling the existing chicken in the coop and see the condition of feed and drink that must be given ad libitum in order to produce the ideal body weight according to the wishes of the entrepreneur and its customers. The results of the research, it can be concluded that maintenance management in RRMC very clear and in accordance with existing procedures, whether it is feeding, handling of diseases affected by disease, vaccine and drugs.

Keywords: broiler chicken, weights, maintenance management.

A. Introduction

The Kolaka district is a developing area in Southeast Sulawesi, Indonesia. Along with the increase in income per capita, the the need for animal protein of Kolaka's population is increasing also. People are increasingly aware of the importance of animal protein for the growth of body tissues. One source of protein is broiler chicken meat. Judging from the nutritional value, broiler chicken meat is not inferior to meat from other livestock. The broiler chicken meat is also easy to get it and the price is relatively cheap than other meats.

Although the level of chicken meat consumption in this area is high, but it is not yet accompanied with the increase of the production of broiler chicken itself. This is because the maintenance management has not been effective (Anggorodi, 1990). One of the obstacles in the broiler maintenance management is the fluctuation of erratic feed prices. The feeding factors cannot be ignored because the feed can be called the most important financing factor in a broiler farm.

The animal farms that have implemented the technological maintenance management is one of the obstacles in increasing of the broiler population (Daghir, 1998). Actually, the Kolaka'

temperature is very supporting the development of broiler. So that the chances of broiler chickens in this area are still very wide open. Through the research of Broiler Chicken Management in Rural Rearing Multivication Centre (RRMC), it is expected to know how to keep chicken from DOC / Starter to Finisher. It is starting from the equipment used / feeding, seed selection, vaccination and coop's model system that will eventually be applied in the field.

B. Methodology

The research was conducted in RRMC Puubunga Village, Baula Sub-district, Kolaka District, Indonesia. The maintenance treatment of broiler farm maintenance business has been conducted for 35 days.

1. The Research Procedures

The maintenance temperature procedures in RRMC ranges from 32.2-350C, the humidity ranges from 60-70%, the lighting/heating of the coop according to the existing rules. The layout of the coop faces the rising sun in order to get the morning sun and not resist the direction of strong winds. The coop model is corrected based on the age of chicken, for chicks aged 1-1 weeks (DOC) using brooder coop (Brooder house). After 2 weeks old, the chick coop is in enlarge. Before the DOC entered the coop, the coop room was cleaned and disinfected first. Initial maintenance is performed on the brooder house for 1 week with room temperature brooder 38-390C.

After that, the newly installed DOC into Brooder house and given drinking water that has been mixed with sugar as much as 5% to restore the condition of chicks due to travel. After 4 hours, chicks are given Vita chicks that are useful to spur growth in DOC. Brooder circle measuring 5x7 meters follow the age of DOC the more days the greater the weight of the body. If the weight of DOC body increase, then the brooder should be enlarged.

2. The Aspect to be Studied

The aspects studied in this research are:

- a) An Overview of the RRMC Company.
- b) Observe the management of broiler chickens in RRMC.
- c) Specific observation of broiler chicken maintenance procedures in RRMC to achieve ideal body weight.

3. The Sample Appearance Method

Samples selected by *Nonprobability sampling* are Purposive based on the purpose of case study research. Selected samples amounted to 5 people, namely:

- a) Chair : 1 Person
- b) Manager : 1 Person
- c) Secretary : 1 Person
- d) Treasurer : 1 Person
- e) Employees : 1 Person

4. Data Source

The source of the data obtained based on two types of properties collected, namely:

- a) Primary data is data obtained directly from respondents. In the implementation of the research will get primary data obtained from interviews with company managers, staff, employees and communities around the company.
- b) Secondary data is data obtained indirectly. At RRMC it is the source of research-related books and journals.

5. The Data Analysis

Analysis of data obtained by using Feed Conversion formula, as follows:

The formula calculates feed conversion:

$$\text{FCR} = \frac{\text{Feed consumption (g/head/day)}}{\text{Weight gain (g/head/day)}}$$

Source: Ferry (2003)

C. Result and Discussion

1. Coop Preparation DOC

Based on the results of research conducted on broiler farms RRMC broiler breeding coop facing toward the rising sun. For the other side of the wall facing the direction of the sunset. This aims to reduce the grips in the coop and prevent the growth of seeds of disease, lice, or moisture caused by litter pads that are too wet due to feces, urine and if the water is spilled (Kortasudjatna & Supridjatna, 2005).

In RRMC using a postal litter system with the consideration that this type of enclosure better air circulation in the coop can run well.

The steps in the preparation of the DOC enclosure are:

- a) Tidy and separate equipment according to function. Furthermore, all equipment is cleaned and washed with water except for heating devices such as coal/brooders. The heater is simply dried with a damp cloth. Clean and sterile equipment is kept in a clean place;
- b) Clean up all dirt and unused items inside and outside the enclosure. The feces must be cleaned immediately and transported out of the site, after which the coop floor is cleaned;
- c) Washing the coop with a sprayer (*sprayer*) with high pressure, starting from the top, walls and floors. The washing process can be done by adding detergent with a ratio of 1 kg of detergent to 1000 litres of water (1: 1000) then rinsing it again with clean water;
- d) Perform sterilization using disinfectant. The disinfectant used is *Medicep*. Sterilization is done in all parts of the enclosure and the environment around the coop;
- e) Calcification uses calcium oxide or lime farming to the inside, floor and the outside perimeter of the coop;
- f) Leaving the coop for 1-2 days before the DOC arrives and during after spraying there should be no entry until the floor and the whole coop is dry;
- g) The day before the DOC came, the husk was sprinkled with a thickness of 7 cm. Before use, the husk has been fumigated with Formalin and Potassium permanganate with a 2: 1 ratio (40ml formalin: 20 grams PK for an area of 2.8 m³). The dosage is 2-3 times the standard dose so that the chaff is sprinkled free of fungus.

2. The Preparation of DOC

Preparation of DOC conducted at RRMC as follows:

a) Installing Brooder/Sires

Broiler farming business at RRMC uses Brooder/heating from kerosene derivatives. This tool is rectangular and filled with coal as much as 6 kg/day overnight at 1000 DOC. The size of the brooder circle is 5 × 7 m. Each held a brooder enlargement, followed by DOC age every 2-3 days to DOC was 2 weeks old. The required temperature at the age of DOC or phase Starter is 38-39°C.

b) Installation of Feeding Place (*Baby chick*) and a Drink

The feeding place for broiler chicken in RRMC uses *baby chick* at the age of Starter. Where DOC feed is needed depends on the number of DOC population for each Brooding house. Feeding *Crumble* (grain) AB-1 feed after DOC came about 15-20 minutes. One feeding site is assumed to be 100 DOCs and placed alternately with the drinking water.

By the time the DOC arrives, the drinking place is filled with water with palm sugar/red with a dose of 5% (50 grams) a litre of water for 4 hours. The provision of sugar water is intended for DOC to obtain / recover energy quickly. After 4 hours DOC is given Vita chick to spur growth on DOC. Every 6 hours and a maximum of 8 hours of Vita chick water were replaced. This is because the active substances and chemical composition is no longer useful in chickens, when passing from the maximum time and drinking water should not be exposed to the sun.

c) Check the Quality and Quantity of DOC

The broiler chicken farm in RRMC is using DOC from PT. JAFFA COMFEED INDONESIA Tbk. MB 202 Platinum Strain. The first activity is done when the DOC comes is to pay attention and check the DOC situation as a whole, both quality and quantity, such as: free from disease, DOC looks active, bright and full fur, rectum is not dirty and weighs not less than 45 grams/head.

3. Maintenance Management

The management of broiler breeding maintenance management in RRMC is very good for everything related to chicken and covers various aspects, including sanitation, vaccinations of antibiotics and disease handling of livestock. Management of broiler chicken maintenance on RRMC farm is as follows:

a) Feeding

The feed broiler chicken used in the RRMC farm business consists of two types: Starter (1-21 days old chickens) and Finisher (age 21-35 harvesting days). The difference between the two types of feed is mainly on protein and energy content. Starter contains 21-23% protein and metabolism energy 3200 Kcal / kg for feed Finisher contains 18% protein and metabolism energy 2500 Kcal.

The feed given in RRMC during the Starter phase is Crumble AB-1 (granular) feed which aims to quickly spur growth during DOC and before entering the Grower period. While the feed phase Finisher given mix feed. The mixed feed was corn, bran and concentrate, with a 3: 1 ratio of 60% maize, 10% bran and 30% concentrate, the feed was mixed into one aiming to get the protein, fat and carbohydrates well met.

b) Feed consumption

Feed consumption in broiler farming business in RRMC is influenced by many factors, among others: physiological condition, physical condition of feed, weight, growth rate, nutrient content of feed and environmental temperature. Feed consumption required broiler chicken is 6 sacks 3.5 tons/period for 1000 heads. The consumption of feed of the recorder/day is 150 grams.

Consumption of food spent in a week is 1050 grams, thus the age of one to twenty-one days in the Starter phase of consumption of cultivated feed is 1300 grams/head. The type of feed consumed by broiler chicken is Crumble AB-1 while the age of chicken on the twenty-first day until the age of thirty-five days in this case in Finisher phase consumption of cultivated feed is 4000 grams/head with mixed feed type. This can be seen in Table 1.

Table 1. Feed Consumption

Age (Weeks)	Feed consumption (gram/head)		Type of Feed
	Per Phase	Cumulative	
1-21 days	Starter	1300	Crumble AB-1
21-35 days	Finisher	4000	Compound

Source: Broiler Chicken Farm RRMC.

c) Feed Conversion

Maintenance of broiler chickens in RRMC with Feed Conversion Ratio (FCR) can be calculated in the maintenance phase those are in the Starter phase and in the Finisher phase. FCR is obtained from the ratio between the amount of feed consumed and the live weight. On the first day to twenty-one days the weight of chicken is 1000 grams/1kg with feed consumption 1300 grams and feed conversion 1.3. The chicken weight at the age of twenty-one days to the age of thirty-five days is 2000 grams/2kg with feed consumption of 4000 grams and the feed conversion is 2.0. This can be seen in table 2.

Table 2. Feed Conversion

Age (days)	Chicken Weight (gram)	Feed Consumption (gram)	Feed Conversion
1-21 Days	1000	1300	13 %
21-35 Days	2000	4000	2 %

Source: Broiler Chicken Farm RRMC.

d) Increase of Body Weight

The maintenance of broiler chickens at broiler breeding business in RRMC weight gain of each chicken is always considered. This is because the chicken production during harvest can be stable and reach the desired body weight. To get a good production need to be controlled with regular weighing every week. If the weight of the chicken has not met the standard, then the amount of feed can be increased by the percentage of weight deficiency of the standard. However, if the chicken body weight exceeds the standard, then the amount of feed given remains the same as the amount of feed given earlier.

Weight gain at DOC age on December 10, 2014 is 45 grams/head with weight gain per phase 45 grams. On December 30, 2014, at the age of two to twenty-one days, the chicken weight is 1000 grams/head, with weight gain per phase production of 1000 grams/head. For broiler weight at age twenty-one day to thirty-five days is 2000 grams/ head with weight per phase production of 2000 grams/head. This can be seen in table 3.

Table 3. Weight Growth

No	Age (Days)	Date	Average Weight (gram/head)	Weight Growth per Phase Productions (gram)
1	DOC	December 10, 2014	45	45
2	2-21 Days	December 30, 2014	1000	1000
3	21-35 Days	January 13, 2015	2000	2000

Source: Broiler Chicken Farm RRMC

The table above can be concluded that broiler body weight in RRMC has met the standard by reaching ideal body weight that is 2000 grams or 2 kg/head during maintenance period 35 days.

4. Health Handling

Health care carried out in broiler farm business in RRMC is the prevention of disease in this case vaccination. In addition, also given drugs include: *Vita stress* supplements and antibiotics such as, *therapy* given at the age of 18-21 days. For *Nutrient*, *Clomysin* and *Doctrine* are given at the time of chicken exposed to a white defecation disease are often called *Pullorum disease*.

Table 4. Vaccination Program

Age	Date	Vaccination	How to Giving
4 days	December 14, 2014	ND-IB	Through Drops of Nose
18 days	December 28, 2014	ND Lasota	Through Drinking Water

Source: Broiler Chicken Farm RRMC

How to administer the vaccine can be through eye drops, nasal drops, drinking water, intramuscular (meat) and subcutaneous (under the skin) injection, wing puncture and sprayer. Vaccination done in RRMC is by way of nose drops that serves to prevent disease ND (*Newcastle disease*) in livestock. The vaccine is performed on a 4 days DOC and *ND Lasota* vaccine through drinking water at 18 days of age.

The disease that attacks broiler chickens in RRMC is white defecation disease or *Pullorum disease* is caused by *Salmonella Pullorum bacteria*. Symptoms are often characterized by the occurrence of white diarrhea. The high mortality rate due to this disease occurs in chicks, especially chicks aged less than 2 weeks.

The peak of death occurs in chickens aged 1-2 weeks first so that breeders in RRMC provide treatment that *Clomysin* and *Doctril* or *Furazolidone* are mixed in the animal feed affected by the disease. The given dose is as much as 25 grams per ¼ tons of feed for 2-3 weeks. Treatment of chickens older than 4 weeks is not recommended and if chickens are seriously infected, they should be destroyed and should be followed by improved sanitation programs.

5. Mortality Rate

The mortality rate found in broiler farming business in RRMC is 10 tail or 1% of 1000 chickens are kept. A mortality rate of 1% does not affect production costs, but for 20-30%

mortality it has an enormous effect on production costs. One that suppresses mortality is by choosing good quality chicken seeds.

Table 5. Number of Chicken Mortality for Maintenance of 1000 heads.

No	Age (Weeks)	Amount (head)
1	DOC	4
2	1	2
3	2	3
4	3	1
Total		10

Source: RRMC Chicken Farming.

6. Harvesting

Harvesting process conducted at the farm in RRMC that is at age 35 days and carried out in the morning after the chicken fed. This harvest time is most anticipated by the farmers because the effort during maintenance will soon be replaced. An expected harvest, of course production in accordance with the wishes or chickens showed optimal growth (Ferry, 2003; Murtidjo. 1987).

7. Marketing

The marketing conducted on broiler RRMC broiler farm is directly supplied to the market Lamekongga, Puubunga and surrounding villages. This is in accordance with the conditions in the field stating that broiler chicken is in great demand by the people of Puubunga Village and Lamekongga market community (Ferry, 2003).

D. Conclusion

The feeding and drinking is done in ad libitum so the chicken is not short of food and drink. The feed that is spent during one period is 6 sacks or 350kg for 1000 heads or 150 grams/head/day. This will increase the chicken body weight increase during maintenance until harvest reaches 2 kg. In this case broiler chicken in RRMC achieve body weight desired by company, that is body weight which is ideal for that with 35 days maintenance period.

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