

Feed Nutrition Study of Several Broiler Partnerships in Blitar Regency on Product Quality

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Abstract— This study aims to examine the effect of feed nutrition provided by different broiler partners in feed mills on product quality in Blitar Regency. The method used is a purposive sampling method with a total of 12 broiler farms consisting of 4 broiler partnerships that use feed from different factories, each partnership is taken 3 farms as a sample. The observed variables were the percentage of carcasses, the percentage of the breast and abdominal fat at the age of maintenance of 35 days. The data is processed by Microsoft Excel program and analyzed using analysis of variance (ANOVA) from the Randomized Block Design (RBD), if it shows a difference then proceed with Duncan's Multiple Range Test. The results showed that the feed given in partnerships V, W, X and Y showed no significant effect ($P > 0.05$) on the percentage of carcasses, percentage of the chest and abdominal fat. Feed given to farms with different partnership patterns of feed mills in Blitar Regency has no different quality. Farmers in conducting broiler business activities viewed from the aspect of feed can partner with all partnerships in Blitar Regency, aside from considering the contract price of production costs and the price of a live chicken harvest contract.

Keywords— Broilers, Different Partnerships, Feed, Carcass Percentage, Percentage of Chest and Abdominal Fat.

I. INTRODUCTION

Broiler is a meat-producing commodity that promises to be developed. Broiler products in the form of meat make a major contribution to society as a source of animal protein because the price is affordable and the taste is popular with the community. Data from the Office of Animal Husbandry and Fisheries in Blitar Regency in 2018 shows the consumption of broiler meat in Blitar Regency at 6.5 kg / capita / year. Broiler meat consumption is related to population and demand for broiler which is also increasing. Broiler population is inseparable from the feed sector. The feed sector contributes greatly to the success of broiler business because feed costs contribute 70% of the total production costs (Kleyn, 2013).

Blitar Regency contributes to the supply of meat which is a source of animal protein for the community, where most of the business systems are in the form of partnerships. Statistical data from the Livestock Service Office of East Java Province (2018) shows that the production of broiler meat in Blitar Regency in 2016 was 5,431,200 kg and in 2017 it was 5,566,800 kg with a population of 4,016,800 tails. The data shows an increase in broiler meat production by 2.50%, while statistics from the Livestock and Fisheries Service Office of Blitar Regency in the third quarter of 2018 showed that there were 10 districts with the largest broiler population in Blitar, namely Garum, Wlingi, Ponggok, Gandusari, Ngelegok, Kademangan, Talun, Kesamben, Binangun and Srengat.

Broilers have a good genetic quality which is a type of superior breeds from crosses from chicken nations that have high productivity, especially in producing meat. Good genetic quality will appear optimally if the broiler is given a supporting environmental factors, such as high-quality feed, a good housing system, and health care and disease prevention. Broilers are the most economical livestock when compared to other livestock, the advantage is the speed of meat production / increase in a relatively fast and short time or about 4-5 weeks of meat production can be marketed or consumed. Advantages of broilers include rapid growth with high body weight in a relatively short time, conversion of small feeds, ready to be cut at a young age and produce quality soft-fiber meat (Wikipedia, 2019).

Broiler production is pursued by providing feed as needed and containing nutrients as recommended. Meat production is closely related to feed consumption and feed conversion. Good feeding will certainly affect meat production, meat quality, feed consumption and feed conversion rates provided.

The supply of broiler feed for each farmer varies according to the level of ability and willingness of farmers and business patterns. Broiler business actors in the form of community farms and partnerships. A partnership often carried out is the plasma core pattern. The company acts as the core that provides seeds, feed, vitamins and medicines, as well as providing animal husbandry and animal health services to plasma (smallholder farmers). Absolute obligation for plasma is that all chickens that are kept must be sold to the company as a core party (Murti et al., 2015). Broiler partnership pattern was chosen because of limited resources on all sides, shifting the position of the main actors from the government and the private sector to the community (Aziziah et al., 2013). Broiler maintenance patterns in Blitar Regency are mostly in the form of partnerships so there is a need to study product quality from several broiler partnerships in Blitar Regency.

II. MATERIALS AND METHODS

Time and Location of Research

The study was conducted in May to August 2019 with research sites on several broiler partnerships that use different feed factories in the Blitar Regency region with a scale of maintenance on livestock (plasma) between 1,500 to 8,000 tails. The study was conducted to examine the effect of feed from different broiler partners in feed mills in Blitar Regency on product quality.

Materials

The material used in this study is 4 broiler partnerships (V, W, X and Y) that use feed from different factories with a scale of maintenance in breeders (plasma) between 1,500 to 8,000 tails (@ broiler partnership 3 farms are taken as samples.). Broilers are drawn from the 4 partnerships at the age of 35 days of maintenance.

Methods

The research method used is purposive sampling method by measuring the percentage of carcass percentage, breast percentage and abdominal fat as many as 60 broilers with details of the sample comes from 4 broiler partnerships, with each broiler partnership taking 3 farms as samples (@ farm as many as 5 randomly taken broiler tails). The measurement of this variable is carried out at the age of maintenance of 35 days.

Variables Observed

The variables observed during this study were the percentage of carcasses, percentage of the chest and abdominal fat. Data from these variables are obtained in the following way:

1. Percentage of Carcass (%)
The percentage of carcass is the weight of the result of cutting parts of the chicken's body after it is cut and discarded feathers, abdominal fat, internal organs, legs, head, neck and blood except the lungs and kidneys then multiplied by 100% (Rizal, 2006).
2. Percentage of Chest Parts (%)
The percentage of the chest is the chest that was obtained after cutting the broiler, weighed and the results divided by the carcass weight multiplied by 100% (Anggitasari et al., 2016).
3. Abdominal Fat (% Life Weight)
The percentage of abdominal fat is obtained by comparing the weight of abdominal fat with life weight multiplied by 100 (Witantra, 2011).

Data analysis

Data obtained from the percentage of carcasses, percentages of the breast and abdominal fat were processed using Microsoft Excel program and analyzed using analysis of variance (ANOVA) of the Randomized Block Design (RCBD), if showing differences then continued with Duncan's Multiple Multiple Test.

III. RESULT AND DISCUSSION

A. Effects of Feed from Different Partnerships on Product Quality

| Variable | Partnerships | | | |
|-------------------------------|--------------|--------------|--------------|--------------|
| | V | W | X | Y |
| Persentase karkas (%) | 72,03 ± 2,55 | 69,12 ± 2,16 | 70,30 ± 2,30 | 70,19 ± 1,39 |
| Percentage of Chest Parts (%) | 40,40 ± 2,12 | 39,80 ± 2,45 | 42,04 ± 3,13 | 42,33 ± 1,52 |
| Abdominal Fat (% Life weight) | 1,60 ± 0,24 | 1,55 ± 0,24 | 1,69 ± 0,47 | 1,30 ± 0,14 |

B. Effects of Feed from Different Partnerships on Percentage of Carcass

Broiler carcass is a part of the body of the broiler that has been removed from the head, legs, blood, fur and internal organs. Regulation of the Minister of Agriculture Number. 20 / Permentan / OT.140 / 4/2009 states that the understanding of poultry carcasses is part of poultry which is obtained by halal and correct slaughtering, hair removal, offal and abdominal discharges, head and neck cut off and both legs so that safe, prevalent, and fit for consumption by humans. The percentage of broiler carcasses is obtained by weighing carcass weight divided by life weight multiplied by one hundred percent. Risnajati (2012) states the percentage of carcass obtained from the comparison of carcass weight to body weight. The live weight of the broiler is cut the greater the percentage of the carcass is also greater. Study of broiler feed nutrition in several partnerships in Blitar can be seen in Table 1. The highest percentage of carcass percentage (%) was in partnership V of 72.03 ± 2.55; then followed by partnership X by 70.30 ± 2.30; partnership Y by 70.19 ± 1.39; and partnership W at 69.12 ± 2.16. Statistical analysis of broiler feed nutrition studies on several partnerships with different farms in Blitar District showed no significant effect (P> 0.05) on the weight of broiler carcasses. Soeparno (1994) explains that the percentage of carcasses will increase according to an increase in life weight. Genetic and environmental factors also affect the growth rate of body composition which includes weight distribution, chemical composition and carcass components. The carcass weight composition is influenced by feed nutrition, age and growth rate. Resnawati (2004) added that in chickens with smaller life weights, generally had a greater percentage of body weight wasted than in chickens with large live weights. Factors that can affect the percentage of carcass include age, sex and body weight. Safalaoh (2005) also states that the percentage of carcasses is influenced by the carcass weight. The weight of the broiler carcass is also supported by the final live weight and handling in the cutting process. The average value of broiler carcass percentage in several partnerships in Blitar Regency ranged from 69.12 - 72.03%. The percentage value of this carcass is still higher than the statement of Pesti and Bakali (1997), which states that the percentage of broiler carcasses aged 5 weeks ranges from 60.52 - 69.91% of the body weight.

C. Effects of Feed from Different Partnerships on Percentage of Chest Parts

The percentage of the chest is obtained by weighing the chest then the results are divided by the carcass weight multiplied by 100%. Study of broiler feed nutrition in several partnerships in Blitar Regency can be seen in Table 1. The highest percentage of chest percentage (%) was in partnership Y of 42.33 ± 1.52; then followed by partnership X by 42.04 ± 3.13; partnership V of 40.40 ± 2.12; and partnership W by 39.80 ± 2.45. The average value of the percentage of the chest part of several Broiler Partnerships in Blitar Regency ranged from 39.80 - 42.33%, this is in accordance with the opinion of Hayse and Marion (1973) that the percentage of the chest part is in line with carcass weight gain and life weight. Statistical

analysis results of broiler feed nutrition studies on several partnerships with different farms in Blitar District showed no significant effect ($P > 0.05$) on the percentage of broiler breast parts, this was influenced by factors of nutrient content in feed, especially protein due to protein content in feed. In some partnerships in Blitar, pre-starter feeds ranged from 20.38 - 24.91% while for starter feeds ranged from 20.00 - 23.75%. Wahyu (2004) states that protein has a very vital function for poultry, including: a) repairing damaged tissue; b) new network growth; c) hair growth as well; d) amino acid suppliers. Bahij (1991) added that commercial chunks of the chest are carcasses that contain a lot of muscle tissue so that their development is influenced by food substances, especially protein.

D. Effects of Feed of Different Partnerships on Abdominal Fat

Abdominal fat is body fat that is stored in the abdominal cavity including fat that surrounds the empedal (Essay and Dawson, 1965). Abdominal fat (%) is obtained by calculating the weight of abdominal fat divided by life weight multiplied by 100%. The highest average percentage of abdominal fat (%) was in partnership X of 1.69 ± 0.47 ; then followed by partnership V of 1.60 ± 0.24 ; W partnership amounting to 1.55 ± 0.24 ; and partnership Y by 1.30 ± 0.14 . The average value of abdominal fat from several partnerships in Blitar Regency ranged from 1.30 - 1.60%. This value falls within the normal range, as stated by Becker et al., (1979) states that the percentage of abdominal broiler fat ranges from 0.73% to 3.78%. Statistical analysis of broiler feed nutrition studies on several partnerships with different breeders in Blitar District showed no significant effect ($P > 0.05$) on broiler abdominal fat. Fontana et al., (1993) mention abdominal fat will increase in chickens that are fed with low protein and high feed energy. Excess energy will be stored in the form of fat in tissues. The part of the body of the broiler that is one of the places to store fat by the broiler is the part around the abdomen. Factors affecting body fat deposition are genotype, sex, and nutrition from broiler feed (Tumova and Teimouri, 2010). Formation of body fat in broilers occurs because of the excess energy consumed. The energy used by the body generally comes from carbohydrates and fat reserves. Sources of carbohydrates in the body can produce body fat that is stored around the innards and under the skin. Broiler with age 21-33 days the existence of abdominal fat is not too much formed because the food substances absorbed by the body are still used for pure growth.

IV. CONCLUSION

Feed given to farms with different partnership patterns of feed mills in Blitar District shows no significant effect ($P >$

0.05) on the percentage of carcasses, breast percentages and abdominal fat so that it can be said that the feed given has no different quality.

APPENDIX

Farmers in conducting broiler business activities viewed from the aspect of feed can partner with all partnerships in Blitar Regency, apart from considering the contract price of production costs and the price of a live chicken harvest contract..

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