



Effect of Feed Additive (Grow Bac Premix) in Feed on the Carcass Percentage of Brahman Cross (Bx) Cattle Carcasses

Octo Firandi Bangun

Animal Husbandry Study Program, Faculty of Science and Technology, Panca Budi Development University, Medan

Email : octobangun11@gmail.com

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ABSTRACT

The purpose of this study was to determine the effect of feeding Feed Additive (Grow Bac Premix) on the carcass percentage of Brahman Cross (BX) cattle. With treatment levels P0 = 100% Concentrate, P1 = 100% Concentrate + (Grow Bac Premix 3 grm/10 kg ration), P2 = 100% Concentrate + (Grow Bac Premix 4 grm/10 kg ration), P3 = 100% Concentrate + (Grow Bac Premix 5 grm/10 kg ration). The design used was a nonfactorial completely randomized design (CRD) with 4 treatments and 5 replicates. The parameters observed were slaughter weight, carcass weight, carcass percentage, non-carcass weight, and non-carcass percentage. Based on the results of this study, the feeding of Feed Additive (Grow Bac Premix) on the quality of Brahman Cross (BX) cattle carcasses is good, namely in the P3 treatment (100% Concentrate + Grow Bac Premix 5 grm/10 kg ration) with consecutive values of slaughter weight 598 kg/head, carcass weight 378 kg/head, carcass percentage 63.00%/head, non-carcass weight 219 kg/head and non-carcass percentage 36.72%.

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Corresponding Author:

Octo Firandi Bangun

Animal Husbandry Study Program, Faculty of Science and Technology, Panca Budi Development University, Medar

Email: octobangun11@gmail.com

1. INTRODUCTION

Beef cattle production in Indonesia has not been able to meet the large demand for beef. This is shown by the high imports of beef (255,600 tons) and live cattle (307,392 heads) in 2022 (Ministry of Agriculture, 2022). The business of maintaining beef cattle industrially has been growing lately. The development of the beef cattle industry is driven by the increasing demand for meat from year to year, while the fulfillment of meat needs is always lacking.

Efforts to increase beef production in Indonesia can be done by increasing the population and productivity of cattle. Increased productivity is carried out through cattle fattening business with a *feedlot system*. Feedlot is maintenance in a limited area (cage) with the main feed in the form of concentrates in a relatively short time.

Concentrated feed is an additional feed given to livestock consisting of a mixture of several feed ingredients to complement the nutritional deficiencies of animal feed forage. The feed in beef cattle fattening consists of concentrates and forage. The provision of forage and concentrates is based on the needs of the cows and the ability to provide these feed materials. Forage is a food ingredient containing high crude fiber needed to smooth and maintain the normal functioning of the digestive tract. Concentrate is a feed that contains easily digestible nutrients needed to increase productivity. Concentrate is also a feed that is given for 90-120 days before the cow is harvested. In general, the feed given to livestock must be according to the needs of livestock both in terms of quality and quantity so that livestock can be used for various body functions, namely basic life, production and reproduction. The addition of vitamins and minerals (Grow Bac Premix) to the concentrate mixture can improve the quality of nutrients in the concentrate which is useful in optimizing productivity and helping to increase livestock growth (Mariyono and Romjali, 2007).

The cattle that are raised are feeder stock feeder cattle and ready-to-slaughter cattle imported to Indonesia generally come from the Australian Commercial Cross (ACC) and Brahmann Cross (BX) with castration/steer or



maiden/heifer males. Brahman Cross cattle are a nation of cattle that are able to adapt quickly in Indonesia and have a rapid weight gain rate and have a high basic body weight (Williamson and Payne, 1993).

Steer and heifer cattle have a difference in purchase price, therefore not only steer cattle, but heifer cattle are often fattened and slaughtered to get meat production. Considering the price and lack of stock of steer cattle at that time, to overcome this, the procurement of heifer cattle that have good quality is carried out at a lower price compared to the price of steer cattle, and heifer cattle are very abundant in Australia. Heifer cows used for fattening are cows that have a low reproductive rate. Information about the productivity of heifer cows is still scarce, so research has been conducted to find out the productivity of heifer cows, especially about the appearance of body weight, body weight gain and carcasses.

Based on the description above, a problem arises, namely whether the addition of premix (Grow Bac Premix) with a different composition to the concentrate can affect the percentage of Brahman Cross cattle carcasses. This study is expected to determine the effect of adding premixes with different compositions to concentrate feed in creating the performance and percentage of Brahman Cross (BX) cattle carcasses.

2. RESEARCH METHODS

Place and Time of Research

This research will be carried out in different locations, namely at PT. Tandem Makmur Abadi as its place of maintenance, and the Mabar Slaughterhouse (RPH) as the location for slaughtering livestock.

Research Materials and Tools

Ingredients

This study used 20 Brahman Cross cows. The cattle are cattle imported from Australia that have been kept for 90 days in feedlots.

The equipment used in this study includes: stationery, brooms, scopes, buckets, feed scales, carcass scales and cutting equipment. The feed used in this study is concentrated feed. The raw materials for the concentrate used are Onggok, Pollard, Molasses, Coffee Husks, BKS, Copra, Soybean Meal, CGF, DDGS, Salt, Limestone, DCP, BCAF, Gaplek, Rice Bran.

Method

The research method used in this study was a non-factorial Complete Random Design (RAL) method with 4 treatments and 5 replications. The treatment provided is as follows:

- P0 = Concentrate 100%
- P1 = 100% Concentrate + (Grow Bac Premix 3 grm/10 kg ration)
- P2 = 100% Concentrate + (Grow Bac Premix 4 grm/10 kg ration)
- P3 = 100% Concentrate + (Grow Bac Premix 5 grm/10 kg ration)

Research Implementation

Cage and Equipment

The cage used in this study is a colony cage equipped with a feed and drinking water place. The cages used in this study are open cages only in the part where feed and drinking water are given asbestos roofs, concrete floors and iron fence walls, and the average cage area is 2.5 m²/head.

Livestock Maintenance

Livestock are grouped in 4 colony cages. The adaptation time of cows from the time they were placed in the cage until the start of the study was one week. Maintenance is carried out for 90 days with the provision of concentrates and forage given in the morning at 07.00 WIB, in the afternoon at 13.00 WIB and at night at 17.00 WIB, while forage is given at 10.00 WIB and 15.00 WIB. Drinking water is given *ad libitum*.

Livestock Slaughter

Before being slaughtered, the cows are placed in a quarantine cage at RPH Cibinong for 24 hours. The cutting is carried out for two days (the first day 5 and the second day 4), the cutting procedure follows the way of the neck, namely on the neck by cutting the *carotid artery* and *jugular vein* and the *oesophagus* so that the blood vessels and *trachea* are cut and the blood excretion process is perfect. The separation of the head, front leg and hind leg (at the *carpo-metacarpal* and *traso-metatarsal* joints) is cut, then the cow is hung on the hind leg (*achilles tendon*). After hanging,

skinning is carried out. Then the removal of the organs in the cavity is carried out

The chest and stomach contents are removed by cutting the *abdominal wall* to the chest. The organs of the liver, spleen, kidneys, heart, *trachea* and lungs are removed.

After the process of cutting, skinning and *evisceration*, then the carcass is split in the vertebrae. The two carcasses are called the right carcass and the left carcass. After being cut into two parts, then the carcass is cut into four parts on the 5th and 6th ribs. After cutting, the carcass is weighed which consists of the front quarter (forequarter) and the rear quarter of the carcass (hindquarter).

Observed Parameters

1. Cut Weight

The slaughter weight is the weight of the cattle that is calculated by weighing the cattle before slaughter that has been fasted for 8-10 hours. (Nurhayati *et al*, 2005).

2. Carcass Weight

The weight of the carcass is the meat along with the bones that are cut after separating the head to the neck limit, the legs to the knee limit, the skin, the blood expelled, the contents of the chest cavity and the contents of the abdominal cavity.

3. Carcass Weight Percentage

The percentage of carcass weight is calculated by weighing the body of the animal that has been cut after being reduced with blood, head, skin, legs and internal organs in addition to the lungs, kidneys and reproductive organs (Nurhayati *et al*, 2005). The percentage of carcass weight is the ratio between the weight of the carcass and the cut weight multiplied by 100%.

4. Bobot Non Karkas

The non-carcass weight was obtained by weighing all non-carcass parts (blood, head, legs, skin and offal) of the livestock concerned (Nurhayati *et al*, 2005).

5. Percentage of Non-Carcasses

The percentage of non-carcasses is calculated by dividing the weight of the entire non-carcass part by the slaughter weight of the livestock in question and then multiplied by 100%. (Nurhayati *et al*, 2005).

3. RESULTS AND DISCUSSION

Observation results The Influence of Giving *feed additive* (Grow Bac Premix) in feed to the percentage of Brahman Cross cow carcasses (Bx) which consists of cut weight, carcass weight, carcass percentage, non-carcass weight, and non-carcass percentage will be described in Table 1.

Table 1. Recapitulation of the average slaughter weight, carcass weight, carcass percentage, non-carcass weight, and non-cow carcass percentage Brahman Cross (Bx) with Giving *feed additive* (Grow Bac Premix).

Treatment	Parameter				
	Cut Weight (kg)	bobot pork knuckle (kg)	Carcass Percentage (%)	Bobot Non Karkas (Kg)	Non-Carcass Percentage (%)
P0	529 ^A	321 ^A	60,60 ^A	208 ^{tn}	39,40 ^D
P1	558 ^{AB}	350 ^{AB}	62,65 ^B	209 ^{tn}	37,35 ^C
P2	582 ^{AB}	371 ^{AB}	63,69 ^C	211 ^{tn}	36,31 ^B
P3	648 ^B	424 ^B	65,26 ^D	225 ^{tn}	34,74 ^A

Description : tn = unreal ($P > 0,05$)

Different superscripts in the same column show a very noticeable difference (uppercase) ($P < 0.01$).

Cut Weight

In this study, it can be found that the highest average value of cutting weight was found in the P3 treatment (100% Concentrate + Grow Bac Premix 5 grm/10 kg ration) which was 648 kg/head, then P2 (100% Concentrate + Grow Bac Premix 4 grm/10 kg ration) which was 582 kg/head, then P1 (100% Concentrate + Grow Bac Premix 3 grm/10 kg ration) which was 558 g/head, and the lowest in the P0 treatment (100% concentrate) which is 529 kg/head. This is because the administration of concentrates with *different premix* compositions has an unreal effect on the slaughter weight of *Brahman Cross cattle*. This difference is due to the fact that the feed given in each treatment is almost the same quality so that the body weight gain of livestock is not different.

The average value of slaughter weight in this study is in the range of 529-648 Kg/head where the results of this study are still higher than the results of the research of Suryani *et al* (2014), the average slaughter weight of brahman cross cattle (BX) with the use of Peptide-G as a feed additive to replace β -adrenergic agonist on the growth performance and quality of the carcass of brahman cross cattle with an average weight of 427 kg/head.

The average height and weight of Brahman Cross (BX) cattle in this study from each treatment given depends on the amount of feed consumed by the livestock, this is in the opinion of Dagher (2001) stating that growth is closely



related to ration consumption, the decrease in growth is caused by a decrease in ration consumption. Decreased ration consumption will result in low consumption of nutrient or energy needed so that livestock productivity, in this case, body weight will be inhibited. Soeparno (2005) stated that variations in body composition or carcasses are mostly dominated by variations in body weight, and a small part is influenced by age. Body weight has a close relationship with body composition and the largest variation of body components is fat.

Carcass Weight

The carcass is the part of cattle that are cut without a head, legs on the lower part (starting from the carpus and tarsus), skin, blood and internal organs such as the liver, heart, lungs, spleen, digestive tract and its contents and reproductive tract (Lawrie, 2003).

In the results of this study, it can be seen that the highest average carcass weight value was found in the treatment of P3 (100% Concentrate + Grow Bac Premix 5 gm/10 kg ration) which was 424 kg/head, then P2 (100% Concentrate + Grow Bac Premix 4 gm/10 kg ration) which was 371 kg/head, then P1 (100% Concentrate + Grow Bac Premix 3 gm/10 kg ration) which was 350 g/head, and the lowest in the P0 treatment (100% concentrate) which is 321 kg/head. This is in accordance with the opinion of Wahju (2004) that the high weight of the carcass is supported by the final life weight as a result of the increase in the life weight of the livestock concerned. According to Pribady (2008), the higher the cutting weight, the higher the carcass weight. The high protein content of the ration will get a high percentage of carcasses as well. The variation in the amount of meat produced from the carcass as well as the quality of meat and meat products is influenced by genetic factors including physiological and nutritional factors. Life and weight can also affect the amount of meat produced from different livestock species (Lubis, 2000).

The average carcass weight of Brahman Cross (BX) cattle in the results of this study was 321-424 kg/head, where this result is higher than the results of the study reported by Suryani et al (2014), the average carcass weight of Brahman cross cattle (BX) with the use of Peptide-G as a feed additive substitute for β -adrenergic agonist on the growth performance and quality of the carcass of Brahman cross cattle with an average weight of 228-231 kg/head. Daud et al. (2007) stated that the carcass increases with the age and weight of the cut. This is in accordance with the results of research by Dewi *et al* (2009) that Brahman Cross (BX) cattle that are fed rations with a higher energy and protein balance, produce significantly higher body weight than rations that contain a low energy and protein balance.

Carcass Percentage

In this study, the treatment given by giving *Feed additive* (Grow Bac Premix) to feed caused a very noticeable difference in the carcass weight of Brahman Cross (BX) cows. This is understandable, because the percentage of carcass weight is a comparison of the carcass weight with the life weight, so that a large life weight will also be followed by a large carcass weight, and vice versa. This is in accordance with the opinion of Wahju (2004) that the high weight of the carcass is supported by the final life weight as a result of the increase in the life weight of the livestock concerned.

In this study, it can be found that the application of *Feed additive* (Grow Bac Premix) to feed has a very real effect on the percentage of carcasses of Brahman Cross (BX) cows. The highest average carcass weight was found in the P3 treatment (100% Concentrate + Grow Bac Premix 5 gm/10 kg ration) which was 65.26 %/head, then P2 (100% Concentrate + Grow Bac Premix 4 gm/10 kg ration) which was 63.69 %/head, then P1 (100% Concentrate + Grow Bac Premix 3 gm/10 kg ration) which was 62.65 %/head, and the lowest in the P0 treatment (100 % concentrate) which was 60.60 %/head. The results of this study are still said to be normal, this is in accordance with the statement of Kartadisastira, (2001) the percentage of carcasses is a comparison between the weight of the carcass and the weight of the empty body (BTK) or the weight of livestock after fasting multiplied by 100%.

The percentage of carcass weight of Brahman Cross (BX) cattle obtained from this study is between 60.60-65.26% of the live weight, this value is higher than the results reported by Suryani et al (2014), the average percentage of carcasses of Brahman cross cows (BX) with the use of Peptide-G as a feed additive to replace β -adrenergic agonists on the growth performance and quality of carcasses of Brahman cross cattle with a carcass percentage of 53%. Susilawati (1998) stated that the factor that affects the percentage of carcasses is an increase in life weight followed by an increase in carcass weight and non-carcass components such as differences in the weight of the head, legs, *viscera* and rumen contents.

The percentage of carcass weight using P3 treatment feed is higher than the percentage of carcass weight in P0, P1 and P2 treatment, this is due to the lower percentage of weight of digestive organs, non-carcass components and vital organs in Brahman Cross (BX) cattle that are given P3 treatment compared to other treatments. This is in accordance with the opinion of Soeparno (2000) that the percentage of carcasses usually increases along with increasing life weight, but the percentage of non-carcass parts such as blood and vital organs decreases.

The percentage of the carcass is calculated by comparing the weight of the carcass with the weight of the cut. This result is obtained from the cutting process to the separation of each part of the carcass. Variations in carcass



weight and percentage are influenced by live weight, quality and quantity of rations as well as the different ability of each livestock to convert the nutrients eaten into carcass components, non-carcasses or other body tissues (Resnawati, 2004).

Bobot Non Karkas

The results of livestock slaughter consist of carcasses and non-carcasses that can be used for various purposes. Abroad, non-carcass parts are not consumed and tried as little as possible, but in developing countries such as Indonesia, non-carcass parts such as head, legs and internal organs are not a few people who like them. The weight of the non-carcass is the body part of the blood, the head, the lower four legs of the carpal joint for the front leg and the tarsal joint for the hind leg, skin, internal organs such as lungs, throat, digestive tract, urinary tract, heart, spleen, liver, and the fatty tissue tissue attached to these parts.

Based on the results of the study, the average weight of non-carcass of Brahman Cross (BX) cows. The lowest average non-carcass weight was found in the P3 treatment (100% Concentrate + Grow Bac Premix 5 gm/10 kg ration) which was 225 kg/head, then P2 (100% Concentrate + Grow Bac Premix 4 gm/10 kg ration) which was 211 kg/head, then P1 (100% Concentrate + Grow Bac Premix 3 gm/10 kg ration) which was 209 g/head, and the lowest in the P0 treatment (100% concentrate) which was 208 kg/head.

In this study, the total non-carcass ranges from 208-225 kg/head, According to Scott *et al* (2000) that the weight of non-carcasses is influenced by feed, if the nutrient content in the ration exceeds the recommended that has been set, the formation of non-carcass components will be higher if the need for production and basic life has been met to the maximum level. This is in accordance with the statement of Mountney (2006), fat and offal are the results of the following that are not calculated in the percentage of the carcass, if the fat is high, the percentage of the carcass will be low. The difference in carcass percentage between treatments can be influenced by weight, diet and genetics. Genetics that exert an influence of 30% shows that there is a limit to the body's response of Brahman Cross (BX) cows to the feed given. This is in accordance with the statement of Morran and Orr (2000), which states that the percentage of carcasses is influenced by race, age, gender, life weight, and diet. Murtidjo (2006) also stated that the percentage of carcasses is an important factor to assess livestock production, because production is closely related to the weight of life, where the more the weight of the carcass, the more the carcass production increases.

Percentage of Non-Carcasses

The percentage of non-carcasses is the weight of non-carcasses divided by the body weight before it is cut multiplied by 100%. Based on the results of the research conducted by *applying Feed additive* (Grow Bac Premix) to feed has a very real effect on the weight of non-carcass of Brahman Cross (BX) cows, this is because the administration of concentrates with *different premix* compositions has a very real effect on the percentage of carcasses of *Brahman Cross cows*.

The lowest average non-carcass weight percentage was found in the P0 treatment (100% concentrate) which was 39.40%/head, then P1 (100% Concentrate + Grow Bac Premix 3 gm/10 kg ration) which was 37.35%/head, then P2 (100% Concentrate + Grow Bac Premix 4 gm/10 kg ration) which was 36.31%/head, and the lowest P3 (100% Concentrate + Grow Bac Premix 5 gm/10 kg ration) which was 34.74%/head.

In this study, the percentage of non-carcasses ranged from 36.72-40.40 %/head. The weight of the non-carcass is closely related to the weight of the carcass. The higher the weight of the non-carcass, the lower the weight of the carcass (Soeparno, 2009). The percentage of carcasses is determined by the amount of feed nutrients consumed and digested, which are used to increase body weight gain in livestock so that higher slaughter weight is obtained (Dewanti, 2013).

4. CONCLUSION

Based on the results of this study, the provision of *feed additive* (Grow Bac Premix) in feed to the good quality of the carcass of Brahman Cross (BX) cattle, namely in the P3 treatment (100% Concentrate + Grow Bac Premix 5 gm/10 kg ration) with consecutive values of 648 kg/head, carcass weight 424 kg/head, carcass percentage 65.26 %/head, non-carcass weight 225 kg/head and non-carcass percentage 34.74 %/head.

REFERENCES

- Dewanti, R., M. Irham and Sudiyono. 2013. Effect of the use of fermented water hyacinth (*Eichornia crassipes*) in rations on the percentage of carcass, non-carcasses, and abdominal fat of local ducks of male ducks aged eight weeks. *Livestock Bulletin* Vol. 37(1): 19-25, February 2013. pp. 19-25.
- Directorate General of Animal Husbandry. 2007. *Large Ruminant Livestock*. Ministry of Agriculture, Jakarta.
- Hammond, J. Jr., J. C. Bawman and T. R. Robinson. 1984. *Hammond's Farm Animals*. 5th ed. Butler dan Tanner Ltd. London.



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- Harper, H., V. M. Rodwell, and P. A. Mayes. 2001. Biochemistry. Translation: Harper's Biochemistry. Publisher of EGC Medical Books. Jakarta.
- Kartadisastra, H. R. 2001. Provision and Management of Ruminant Animal Feed. Kanisius. Yogyakarta.
- Lawrie, R. A. 2003. Flesh Science. Translation: Aminuddin Prakkasi. Publisher Universitas Indonesia Press. Jakarta.
- Mariyono and E, Romjali. 2007. Protein Feed Technology for Beef Cattle Agroinnovation Sinar Tani. Edition 21 – 27 November 2012. No. 3483.
- Murtidjo. 2000. Broiler Chicken Breeding. Copyright © 2019 Yogyakarta. All Rights Reserved.
- Nurhayati, Nelwida, Marsadayanti, 2005. The Effect of Using Noni Fruit Flour in the Ration on the Carcass Weight of Broiler Chickens. Journal of Tropical Livestock Development 30 (2) : 96 – 101.
- Soeparno. 2001. Basic Livestock Product Technology. Faculty of Animal Husbandry. Yogyakarta: Gadjah Mada University.
- Soeparno. 2005. Meat Science and Technology. 7th edition. Gajah Mada University Press, Yogyakarta.
- Soeparno. 2009. Meat Science and Technology. Gadjah Mada University Press, Yogyakarta.
- Suryani. A. t., Panjono., Agus A. 2014. Effect of the use of Peptide-G as a feed additive substitute β -adrenergic agonist on the growth performance and carcass quality of brahman cross cattle. Livestock Bulletin Vol. 38(2): 101-108.
- Williamson, G. and W. J. A. Payne. 1993. Introduction to Tropical Animal Husbandry. Translated by S.G.N. Dwija, D.Gajah Mada University Press. Yogyakarta