

UTILIZATION OF WASTE BANANA SKIN AND EGGSHELL AS A FEED SUPPLEMENT OF CHICKEN

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Presented in Beihang Internasional Science Fair (BHISF) 2016

1. Introduction

Often we find various kinds of environmental pollution caused by human action itself. Garbage is one of the problems in the environmental pollution that are still not handled optimally. Garbage or waste are often founded in various places, such as on the road, around the yard, school, or in public places.

Garbage is also a remnant of the human day or the natural processes which is solid or semi-solid form of organic or inorganic substances, that are biodegradable or non biodegradable deemed no longer useful and discharged into the environment (Slamet, 2002). As we all know in organic waste some of them comes from the leftovers, although organic waste biodegradable natural or biological. But waste from food can easily rot and even longer. If we let the garbage just like that, it will accumulate and eventually could be a source of disease.

The object in this study are the chickens. As we know that chicken is one of the animals that consumed by many people as a source of protein. Each year the chicken meat demand increases, so automatically the prices of chicken also increased. One contributing factor is some of the raw material of chicken feed are mostly imported. With the weakening of the rupiah against foreign currencies (mainly US dollars) led to higher import costs and the price of imported goods become more expensive. So the efforts to reduce production costs of feed, is through

reuse the organic waste such as banana peels and eggshells as the added material in chicken feed. Banana peels contains carbohydrate, fat, and high protein. While eggshells also has a very high calcium, so it can replace the chicken feed ingredients become more affordable.

2. Problem Statement

Waste such as banana peels contains a lot of nutrients, such as carbohydrate, fat, and high protein, while eggshells contains high calcium that are very unfortunate if it is not being used again. Therefore solutions to overcome this problem is necessary.

3. The Purpose of The Investigation

This study aims to know whether banana peels and eggshells can be used as the added material in chicken feed. And also to determine the effect of the added material feed on the growth of chicken weight.

4. Research Method

This research was conducted by adding the feed ingredients chicken with banana peels and egg shells, will then be analyzed in the weight growth of chicken. This study used 10 chickens free-range and the age of the chicken used in the age of 1 month, consisting of four chickens were given treatment in the form of additional 40% of banana peel with 10% eggshell and 4 chickens were given treatment 30% of banana skin with 20% of eggshell on feed

chickens and 2 chickens as controls. Each sample of the chicken been uniformly according to age and physical condition.

Research tools:

1. Knives
2. Cutting board
3. Basin
4. Chicken coop
5. Scales
6. Lights

Materials:

1. Banana skin
2. Egg shells
3. Water
4. Vegetable oil
5. 400 gr Bran
6. 400 gr Concentrate

The process is described as follows:

1. Prepare tools and materials. There are 2 formulas required. Formula 1 = 4:1, contains 320 grams banana peels and 80 grams eggshells. Formula 2 = 3:2, contains 240 grams banana peels and 160 grams eggshells.
2. Banana skin is peeled from the fruit in small pieces.
3. Waste egg shells is destroyed until finely ground.
4. After banana peels and eggshells are crushed, insert them into the basin.
5. Bran and concentrates are put into a bowl and then being mix with banana peels and egg shells. Give a little water and vegetable oil. Comparison mix banana peels and eggshells with bran is 50% : 50%.
6. Stir the compound until evenly distributed.
7. After the feed mixture has been uneven, it is ready to be consumed by the chickens.

5. Results and Analysis

After doing the research for one month, the following are the research data on the growth of chicken body weight:

Table 4. Data of the growth of chicken body weight, using 40% banana peels and 10% egg shells.

No	Chicken	Early Weight	Weight (g)				Physical Condition
			Week I	Week II	Week III	Week IV	
1	Chicken 1	900 g	950 g	1200 g	1400 g	1750 g	Good
2	Chicken 2	1000 g	1050 g	1300 g	1550 g	1670 g	Good
3	Chicken 3	800 g	870 g	1100 g	1350 g	1700 g	Good
4	Chicken 4	700 g	650 g	750 g	800 g	1150 g	Good
Average		850 g	880 g	1090 g	1275 g	1567 g	Good

Table 5. Data of the growth of chicken body weight, using 30% banana peels and 20% eggshells.

No	Chicken	Early Weight	Weight (g)				Physical Condition
			Week I	Week II	Week III	Week IV	
1	Chicken 1	900 g	950 g	1200 g	1400 g	1750 g	Good
2	Chicken 2	1000 g	1050 g	1300 g	1550 g	1670 g	Good
3	Chicken 3	800 g	870 g	1100 g	1350 g	1700 g	Good
4	Chicken 4	700 g	650 g	750 g	800 g	1150 g	Good
Average		850 g	880 g	1090 g	1275 g	1567 g	Good

Table 6. Data of the growth of chicken body weight, without treatment.

No	Chicken	Early Weight	Weight (g)				Physical Condition
			Week I	Week II	Week III	Week IV	
1	Chicken 1	1000 g	1100 g	1150 g	1300 g	Good	
2	Chicken 2	1000 g	1100 g	1150 g	1270 g	Good	
	Average	1000 g	1100 g	1150 g	1285 g	Good	

Based on the research results, it is evident that the formula of banana peels and eggshells for chicken feed, can add the weight of the chicken. This is because, banana peels contains nutrients, such as carbohydrates, fats, protein, calcium, phosphorus, iron, vitamin B, vitamin C and water (Basse, 2000). In theory, the results of chemical analysis showed that the composition of the banana peels contains a lot of water that is 68.90% and 18.50% carbohydrate. The carbohydrate that contained in the banana peel is starch. Animals and humans also used starch as an important energy source in their life. Starch is the main energy source for living creatures (Johari and Rahmawati, 2006). In addition to carbohydrates, fat is also influence in the growth of chicken body weight. Based on the results of the research that was conducted by Budi et al., (2008), that the granting of an eggshell powder in the ration significantly affect the level of fertility in animals poultry, but it has no effect on hatchability. This influence can arise due to the high calcium and phosphorus contained in the eggshell. So, the eggshell itself is not a big influence on the growth of chicken body

weight, but it affects on fertility rate of chicken or poultry.

According to Jamila (2014), the content of calcium and phosphorus contained in the waste egg sells can also be used to improve fertility in poultry. Thus, the eggshell is not a big influence on the growth of chicken body weight, because the calcium content of the eggshell is required for laying hens instead of chicken.

6. Conclusion

Based on this research, it can be concluded that the re-utilization of banana peels and eggshells as the added material in chicken feed, and it is also affect the growth of chicken body weight compared with the growth of chicken body without using banana peels and eggshells as the added material in chicken feed. But banana peels proved more influence in the growth of chicken weight rather than the eggshells.

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