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The Effect of Feeding Odot Grass and Ecoenzyme Fermented Rice Straw on The Performance of Local Rams

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Abstract. The most important need to be considered in the maintenance of livestock is feed. Feed itself has constraints on its availability during the dry season, sometimes forage feed is difficult to obtain, only straw (plant remains) remains. This study aims to determine the effect of odot grass and rice straw fermented using ecoenzyme on the performance of local sheep. This research was carried out in the Firuza enclosure from September 8 to November 8, 2020. The method used is a complete randomized design (CRD) with 5 treatments and 4 repetitions. The treatments consists of 100% odot grass + 0% fermented rice straw (PO), 75% odot grass + 25% fermented rice straw (P1), 50% odot grass + 50% fermented rice straw (P2), 25% odot grass + 75% fermented rice straw (P3), 0% odot grass + 100% fermented rice straw (P4). The parameters studied were weight gain, feed consumption, feed conversion and Income Over Feed Cost (IOFC). The results of the study showed that fermented rice straw can increase palatability thus feed consumption, however it was unable to meet nutritional needs. The treatments caused inefficient weight gain and high IOFC. Based on this study, it can be concluded that feeding rice straw fermented using ecoenzyme caused high feed consumption thus low weight gain resulting in high IOFC.

Keyword: Odot Grass, Rice Straw, Fermentation, Ecoenzyme, Performance

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1 Introduction

Sheep belong to small ruminants that contribute to meeting the needs of animal protein meat. [1] Reported that in Indonesia the population of sheep in 2017 was 17,142,498 heads increased in 2019 to 17,794,344 heads. This increase in sheep population causes the need for forage which is the main source of animal feed ingredients is also increasing, but the availability of quality forage is still experiencing many obstacles such as lack of land for forage planting, and the influence of the dry season.

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The most important need to be considered in the maintenance of ruminants such as buffaloes, cows, sheep and goats is feed. Feed itself has constraints on its availability during the dry season, sometimes forage feed is difficult to obtain, only straw (plant remains) remains. One example of such straw is rice straw can be used for animal feed, but it has low quality. It is necessary to process rice straw as animal feed using physical, biological and chemical technology to improve the quality of rice straw. Alternative efforts to provide forage can be done by developing one of the grasses, for example, mini elephant grass (*Pennisetum purpureum cv. Mott*) because it is a superior type of grass. This mini elephant grass can be given to livestock without having to be chopped first because it has a mini size so it is more efficient for breeders.

Ecoenzyme is the result of complex fermentation of ingredients in the form of kitchen waste or organic materials, sugar and water in conditions without oxygen or anaerobes the color of this solution is dark brown. The aroma of the ecoenzyme solution is strong sour and sweet. The content of ecoenzymes in the form of alcohol and organic acid obtained during the course of anaerobic bacterial metabolism by itself, from the remains of fruits and vegetables depending on what types of microorganisms are contained in the organic matter, there are several other contents such as CO3 (carbonate) and NO3 (Nitrate). The author was led to conduct research based on this regarding the effect of giving fermented rice straw using ecoenzyme on the performance of local rams.

2. Materials and Method

2.1. Materials

The materials used in the study were 20 local rams with a body weight range of 14 ± 1.40 kg, ecoenzymes, odot grass, water, molasses, minerals, deworming, water, antibiotics and disinfectants.

2.2. Methods

The study was conducted experimentally using a Complete Randomized Design (CRD) with 5 treatments and 4 repeats. As for the treatment given:

P0 = 100% odot grass + 0% fermented rice straw

P1 = 75% odot grass +25% fermented rice straw

P2 = 50% odot grass + 50% fermented rice straw

P3 = 25% odot grass + 75% fermented rice straw

P4 = 0% odot grass + 100% fermented rice straw

The replication is obtained by the following formula.

$t\ (n-1) \geq 15$

$5(n-1) \geq 15$

$$5n-5 \geq 15$$

$$5n \geq 20$$

$$n \geq 4$$

3. Results and Discussion

3.1. Feed Consumption

Digram 1. Average feed ration of sheep fed with odot grass and rice straw fermented ecoenzyme during research (g / head / day).

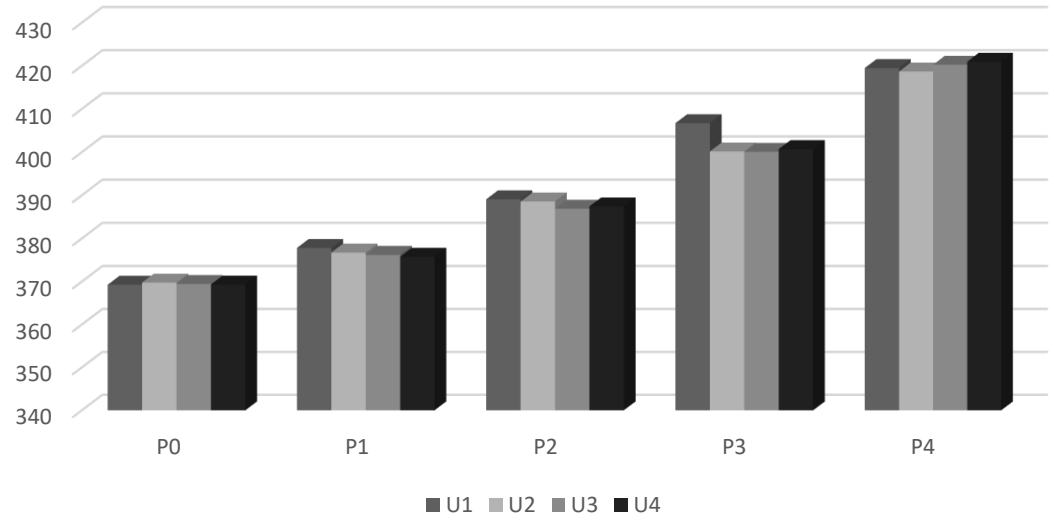
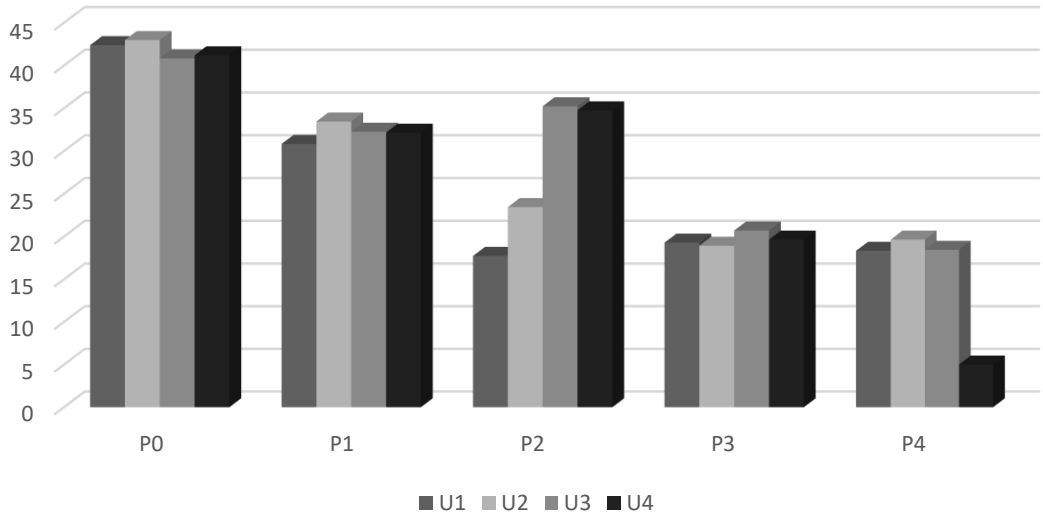


Table 1. showed the average feed consumption of local rams during the study in the form of BK (dry matter) fed with odot grass and ecoenzyme fermented rice straw ranging between 369.45-419.83 (g/head/day). The consumption of dry matter in this study is low, it is suspected that there is no additional feed in the form of concentrates so that the needs of dry matter are still insufficient. [2] Stating low or high ration consumption can be influenced by the surrounding environment or the livestock itself. [3] states that the level of consumption of a feed is influenced by feed factors or other factors of the livestock. These feed factors can be in the form of palatability or digestibility while factors from livestock can be in the form of gender, age, nation and livestock health.

Differences in the shape and type of feed ingredients that make up the ration can have a different effect on the level of palatability which can cause different increases in the amount of animal feed consumption [4]. Diversity analysis showed that giving fermented rice straw up to 100% had a very noticeable effect ($p<0.01$) on feed consumption, fermentation treatment can produce changes in the color, aroma, taste and texture of the straw. This is in agreement with the statement [5] stating that the fermentation process can make the complete compound overhaul simpler. This complete compound overhaul can be in the form of carbohydrates that produce organic acids, simple sugars, CO2, energy and water vapor. These organic acids that have been produced provide changes to fermentation products so as to provide fresh taste and aroma and increase the palatability of the feed.

3.2. Weight Gain

Diagram 2. Average weight gain of bomba given odot grass and ecoenzyme fermented rice straw (g / head / day).

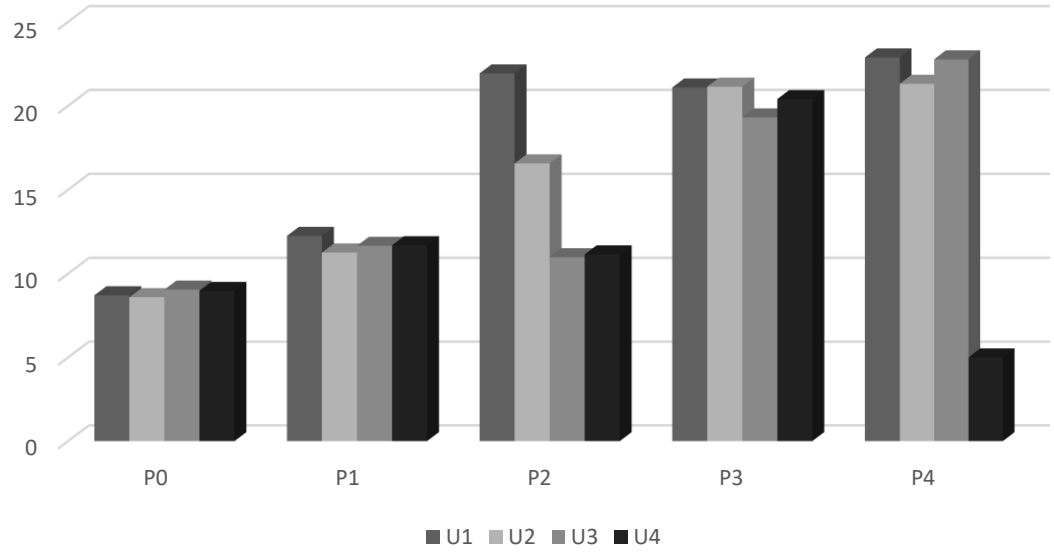


The results of the study obtained the average amount of weight gain that had been given odot grass feed and ecoenzyme fermented rice straw ranged from 18.84-41.85 (g / head / day), the average weight gain was relatively low. The low weight gain in this study indicated that livestock have not received enough nutritional intake so that they can only meet basic life needs and have an impact on high weight gain difficult to achieve. . This is in agreement with [6] if the nutrients obtained are only met for basic living needs but productivity results are quite low, this is due to several variables limiting the quality of basal feed given so that it has an impact on the lack of incoming feed nutrients so that the digestibility of high-fiber feed is very low and feed substances have not been met to be able to produce and for livestock growth. Growth will be hindered if the results of the feed that has been given have not been able to meet the nutritional content needed by livestock both in terms of quality and quantity.

[7] argue that the difference in PBBH is thought to be due to differences in the amount of nutrient consumption in feed in the form of crude protein, organic matter or dry matter compared to other treatments. [8] argue that to obtain good growth rate results and fast yields, it requires energy consumption and high amounts of protein. Concentrate feed works in the rumen by processing concentrate feed at the beginning as an energy source then can utilize food from crude fiber, so that the population of microorganisms in the rumen can develop properly.

3.3. Feed Conversion

Table 3. Local feed conversion of rams during the study



The average conversion of sheep feed with the treatment of odot grass and ecoenzyme fermented rice straw to 100% (P4) ranged from 8.83-22.30. The higher the amount of rice straw given, the higher the conversion of feed produced. This can occur because the amount of feed consumption is higher while the amount of weight gain is low.

Based on the results of this study, the conversion value of high treatment is suspected to be low nutritional quality of feed produced due to lack of additional feed such as concentrates, this is one factor. Seeing this trend, the provision of odot grass and fermented rice straw must be balanced with concentrates or other additional feed because it is feared that weight gain will occur. The causes that can have an impact on animal feed conversion are temperature, feed (appearance, smell, taste and texture), nutritional value, feed energy level and disease [9].

3.4 *Income Over Feed Cost* (*IOFC)*

Table 4. Average Icome Over Feed Cost (IOFC) data of local rams during the study (Rp).

Treatment	Acceptance (Rp).	Feed Cost (Rp).	IOFC (Rp).
P0	2.301	719	1.582
P1	1.769	690	1.080
P2	1.529	657	872
P3	1.080	576	505
P4	1.036	542	494

Based on the average IOFC results above, it can be seen that the cost of rations and receipts of P0 is greater than P1, P2, P3 and P4. This is also followed by weight gain and feed consumption,

among the 5 treatments P0 provides a fairly large benefit from other treatments, which is Rp. 1,582, while the lowest profit in P4 treatment is Rp. 494. This is because the daily consumption of P0 is greater along with the resulting weight gain. While the P4 treatment obtained the lowest IOFC value, because the amount of daily consumption was also the lowest in line with low weight gain. This is in agreement with the statement [10] that weight gain is interrelated with the conversion value of feed and a small total feed cost will generate large profits as well. This weight gain and feed consumption greatly affect the IOFC value.

4. Conclusion

Giving ecoenzyme fermented rice straw to replace odot grass by 100% can increase palatability, this can be seen from the high consumption of feed yield, besides that ecoenzyme fermented rice straw has not been able to meet nutritional needs, it can be seen from inefficient weight gain and high conversion value and IOFC value from ecoenzyme fermented rice straw, including low, suspected feed costs are not in accordance with the receipt of body weight gain.

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