PHYSICAL AND CHEMICAL CHANGES OF CORN COB, AND RICE STRAW THROUGH FERMENTATION TECHNOLOGY AS RUMINANT FEED INGREDIENTS

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ABSTRACT

Feed is a very important factor in supporting the success of livestock business. Ruminants are very dependent on forage feed. On the other hand, the availability of forage feeds fluctuates greatly, abundantly in the rainy season but minimal during the dry season. Rice straw and corn cobs are agricultural products that have the potential to be used as alternatives to ruminant feed. Using rice straw, and corn cobs as animal feed for ruminants can help solve the problem of livestock feed shortages, especially in the dry season. The use of these feed ingredients as animal feed is limited due to low digestibility. Various methods can be used to overcome the nutritional value contained in it, including by applying fermentation technology.

This research was conducted experimentally in two stages, the first stage was to apply the fermentation technology of ammonia and molasses with various variations in the length of fermentation time. Several indicators of feed quality, namely crude protein and crude fiber content will be measured as the most important chemical indicators, in addition to other chemical indicators. Physical indicators such as smell, texture and appearance of feed will be observed descriptively as an ingredient to assess the quality of feed ingredients in terms of physical factors. The second stage is an in vivo digestibility test for the palatability of feed when given to livestock.

The results of this study were obtained that there were physical (color, odor, structure) and chemical changes (protein, carbohydrates, ash, crude fiber) on corn cobs and rice straw with the application of urea ammoniation technology combined with Pseudomonas and Lactobacillus (EM4) bacteria. Various physical and chemical changes that occur are not always in line with changes in feed digestibility and palatability. The palatability of the treatment with the existing doses shows that the palatability is not very good when given alone, so it is necessary to mix it with other ingredients.

Kata Kunci: *corn cobs, rice straw, fermentation technology, ruminant feed*