Empowering Cattle Farms By Improving Feed Quality By Processing Fermented Feed Made From Straw, Grass And Corn Cob in Bendo, Ngentakrejo, Kulon Progo

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Abstract. This community service aims to empower cattle farming by improving feed quality by processing fermented feed made from straw, grass and corn kernels in Bendo Hamlet, Ngentakrejo, Kulon Progo. The use of conventional animal feed such as grass and straw causes a lack of livestock quality in Bendo Hamlet which is characterized by thin and malnourished animals and the difficulty of finding feed during the dry season. Based on this, this empowerment conceptualized the program as a follow-up to solve the problems faced by the Bendo Hamlet livestock group through training in making fermented feed. The implementation method was carried out through five stages including problem identification, conceptualization, success indicators, validation, and application. The final results showed the understanding and knowledge of the Bendo Hamlet livestock group in improving the quality of livestock through fermented feed processing.

Keywords: Feed Fermentation; Training; Socialization

1 Introduction

Cattle farming is one of the main businesses of the farmer-livestock group in Bendo Hamlet. In general, in the Bendo hamlet, Ngentakrejo, Kulon Progo, they work as farmers and ranchers, and almost the entire population has livestock ranging from 2–5 heads per resident. These livestock will later be sold by the hamlet residents during certain events such as Eid al-Adha sacrifice, celebration (walimahan) events, weddings, or other parties that are better known as “asslametan” or communal feast. This makes cattle very important for the lives of the residents of Bendo Hamlet, where, apart from being a long-term investment, it is also an asset and source of income that is quite influential for the residents.

In raising cattle, there are several important factors to support sustainability and to maintain the farm. One of the important factors that influences the development of cattle farms is the problem of feeding (Pamungkas & Kompiang, 2006). Providing good feed will produce good-quality livestock, so the availability and selection of various types of feed are very important to achieve this goal. In general, the type of feed used for livestock is natural or forage feed in the form of green grass, straw, and leaves. This type of feed is the most basic type of feed because it is obtained directly from nature, and straw can be obtained from agricultural products. This means that this type of feed does not go through any processing. Apart from natural feed, there are also processed feeds, such as bran and fermented feed.

However, there are several problems related to meeting the needs of animal feed in terms of availability and variety of feed types. Usually, Hamlet Bendo breeders depends on

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available feed from crop residues in the form of straw. In addition to the remaining harvest, Bendo Hamlet residents also use forages such as grass and leaves. The problem occurs during the dry season, when the availability of feed originating from agricultural processing residues becomes difficult to obtain. This is the cause of the difficulty in obtaining sufficient feed for daily feed needs, which results in a lack of sufficient and quality feed intake. Consequently, the cows in Bendo Hamlet experience nutritional deficiencies and balanced nutrition. This can be seen in the physique of the lean cattle. These problems require solving the problem of meeting the need for feed from other sources, which not only remain available during the dry season but also contain sufficient nutrients to meet the nutritional needs of livestock.

The existence of this empowerment program is aimed at solving the problems experienced, as mentioned above. The goal is to provide feed that is more reliable in terms of nutritional content and availability. The use of fermented feed is considered a solution to overcome the problems mentioned. Fermented feed is the result of processed feed derived from conventional feed ingredients such as straw, leaves, and grass with the help of reagents or microorganisms and mixed with several other ingredients such as bran, molasses, and premixed protein, so fermented feed is a good choice to meet the feed needs of livestock in addition to the use of conventional feed. In addition, fermented feed has a longer shelf life, so it can still be used in various conditions, such as the dry season. To realize the use of fermented feed, it is necessary to carry out counselling or socialization so that the residents can understand how to process fermented feed.

Special Problems Faced by Partners

Based on the situation analysis, some of the obstacles and problems experienced by the community were as follows:
1. Low knowledge of animal feed fermentation technology.
2. Lack of public understanding of the use of feed from crop residues in the form of straw, corn cob, and elephant grass as animal feed.
3. Lack of adequate facilities.

2 Methodology

The implementation of the Bendo Hamlet cattle farming empowerment program had 4 stages of implementation including problem identification, conceptualization, application and evaluation.

2.1 Activity Implementation Method

In the activity plan, to solve the existing problems in Bendo Hamlet, Ngentak Rejo, and Kulon Progo, one of the solutions for the community problems is to increase the quantity and quality of animal feed so that the nutrition of the animals is properly fulfilled.

2.2 Program Approach Method

Approach method of the program activities carried out for 1 month is a partnership between Lecturers at the Muhammadiyah University of Yogyakarta and the community to solve existing problems, one of which is increasing the quantity, quality, and human resources in the hamlet by increasing understanding by holding socialization of fermented animal feed filled with the speaker with a veterinarian background. Naturally, without a doubt, the speaker really understood what needed to be conveyed to the public, so that the public's view is more open and their livestock become fertile livestock with ideal weight. Furthermore, to increase understanding of how to make fermented feed, the participants would be trained in a direct practice to process fermented feed. The results would be used as animal feed ingredients by the community, as well as to address community problems.

Fermentation Preparation Ingredients

Ingredients used included straw, elephant grass, corn jam, foliage, banana trunk (gedebok), rice bran/polar, EM4, molasses, coarse salt, counter machine, and cow minerals
Fermentation Preparation Tool

Tools used: chopping machine, barrel or plastic bag, then scales.

Steps to Make Fermented Feed

a. Preparation

1) Weigh 100 kg of forage and other ingredients, 10% or 10 kg of rice bran or polar, and then 0.5 kg–1 kg of coarse salt.
2) Prepare EMP, molasses, mineral bovine, and water.

b. Implementation

1) Lay out the mat for the fermentation process, then chop the straw, elephant grass, and corn cob using the chopper machine provided to produce the maximum pieces, or cut the ingredients using a machete with a blade size of 5 cm.
2) Spread the chopped grass on a 15-20 cm-thick base, then sprinkle evenly with rice bran and sprinkle salt and minerals on top. Then, sprinkle a solution of water that has been mixed with EM4 and molasses.
3) Mix all the ingredients that have been spread until evenly distributed, then put the ingredients into the space provided (large plastic or barrel) and compacted by trampling. Then, close tightly to minimize air entry.
4) Store for at least 2 days (48 hours) in a place protected from heat and rain, and the fermented feed is ready to be given to livestock.

This fermentation can be opened after 2 days, and then it will be ready to become animal feed. A sign of successful animal feed fermentation is that the fermented product emits a fragrant and sweet odor. The process of taking it is to take it sufficiently, and then to close the feed container tightly to minimize the air entry. For the durability of animal feed, it is necessary to seal the container tightly after the process of taking the feed. Animal feed fermentation can last up to 3 months if the lid (barrel or plastic) is not removed and up to 1 month when the lid (barrel or plastic) has been opened.

Evaluation of Program Implementation and Sustainability

To achieve better results, it is necessary to evaluate the program that would be carried out by the UMY KKN 222 team for the residents of Bendo Hamlet, Ngentakrejo.

1. Early Stage
   a. Measuring the ability of partners to be able to understand the making of fermented animal feed.
   b. Evaluating partners' understanding in the making of fermented animal feed.

2. Implementation Level
   a. Evaluating partners to understand the process of making fermented animal feed.

3. Final Stage
   a. Measuring indicators of increasing the economy of members of farmer groups by making fermented animal feed.

Program Sustainability

This activity is very useful when there is follow-up because the partners or residents have attended training and received assistance. In addition, the UMY KKN 222 TEAM is also a servant, providing ongoing assistance on a scale until it is included in the Ready Independent category.

3 Results and Discussion

In general, the activities of utilizing fermentation technology for feed made from straw, grass, and corn cobs in Bendo Hamlet, Ngentakrejo has been running well and smoothly. The target of the activity includes breeders (the community).
A) Profile of Program Participants

The results of the evaluation of this socialization program showed that there were 19 people due to working hours, which required many people to still work in the fields. Most of the participants were farmers and breeders.

B) Coordination Meetings

Coordination meetings were carried out in several stages, including internal coordination with the implementation team and coordination with the field supervisors.

1. Internal coordination

   Internal coordination was carried out after the empowerment implementation program was approved to discuss the technical implementation of the program. In this coordination, technical stages, timelines, program targets and participants, program equipment, and management personnel were discussed. After the program was underway, routine coordination was carried out to evaluate the activities that have been carried out, and to plan further activities.

2. Coordination with the Chairperson of the Coordination Group and Field Supervisors

   Coordination was carried out several times, both in person in the form of meetings and via WhatsApp. The results of coordination with the field supervisors, among others, welcomed the planned socialization activity because it can provide insight, knowledge, and skills in making animal feed. Some of the obstacles in the implementation were:
   1. The number of group activities so that it required setting a timetable that suited the group.
   2. The seasonal arrangements that were not supportive caused the implementation of training and the implementation in the field to change.

C) Counseling

   Counseling was carried out directly by the implementation team, assisted by the presenters in the form of an oral presentation accompanied by factual conditions from the field and accompanied by direct practice, so that it was easy to understand and interesting for the participants. Apart from that, reading material was also provided, and could be utilized by the counseling participants continuously. The counseling activity consisted of an explanation of the making of fermented feed.

D) Training

   The training activity is a follow-up to counseling and was carried out to provide technical skills for program participants in applying technology by carrying out direct practical activities on several aspects of technology, including model preparation and how to make feed. The training was held in front of the local village head's residence with the participants consisting of livestock groups and young people who were interested in practicing making fermented feed, guided by a speaker with a veterinarian background who was also an instructor for the activities being held.

4 Conclusions

From the evaluation and analysis of the program that has been carried out, it can be concluded as follows:

1. Although most of the participants in the Animal Feed Empowerment program are older farmers who do not have a higher education, they have a high enthusiasm to advance and develop technology.

2. This empowerment program provides great benefits for the program participants because it can increase insight, knowledge, and skills in utilizing fermented animal feed.
Even though the fermentation technology was something new for the participants, based on the various activities carried out, they felt that they had no difficulty in implementing the technology.

Food as nutrition and the main need for livestock are not fulfilled properly, so many livestock were found to have difficulty getting fat. This is the main view for empowerment so that later the community understands what are the needs for their livestock so that their nutrition remains balanced. The main food for the residents' livestock comes from the remaining harvest, namely straw, which is a little difficult to get on weekdays because people only can get straw after they have a big harvest in the fields they work on. This becomes the main factor, which would be discussed together to find a solution.

We gave socialization about this fermentation procedure with the people of Bendo Hamlet, Ngantakrejo, and Kulon Progo, where in general most of them did not understand the processing and preservation for their livestock feed. They did not process the remaining rice yields in the agricultural sector into quality food for their livestock, so the livestock did not have ideal weight or fat. Even after conducting a survey and seeing directly the condition of livestock in several residents' homes, livestock, especially cows, looked thin and difficult to fatten.

References