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Training on Making "Complete Feed" for Goat Feed in Wanagiri Village, Sukasada SubSubdistrict, Buleleng Regency

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ABSTRACT

Wanagiri Village is a village located in Sukasada SubSubdistrict, Buleleng Regency. Most of the people's livelihoods are farmers, ranchers, and coffee processors, which have the potential to be developed. From the main output of coffee, a complete feed will be made that utilizes coffee waste as feed for the PE goats that are widely raised there. In addition, the partners lacked knowledge in the field of feed, especially utilizing coffee waste as feed by mixing it with superior forage available there, both grass and legumes. Therefore, the right ratio formulation technique can be given to FE goats. Solutions made to solve problems faced by partners in making complete feed for goats. The method that will be used is the farmer's active participation extension method and explorative.

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INTRODUCTION

Village Community Empowerment by Law of Republic Indonesia Number 6 of 2014, is an attempt to enhance the standard of living and maximize the well-being of the village community (Anonim, 2021). Furthermore, it is also said that village community empowerment is an effort to develop community independence and welfare by increasing knowledge, attitudes, skills, behavior, awareness abilities and utilizing resources through the establishment of policies, programs, activities, and assistance that are by the essence of the priority problems of community needs. Wanagiri Village is a village located in Sukasada subSubdistrict, Buleleng Regency. Most of the people's livelihoods are farmers, ranchers, and coffee processors, which have the potential to be developed. Wanagiri Village has a variety of natural potentials that need to be developed both from the agriculture, livestock, and fisheries sectors. (Anonim, 2021).

The location is a bit far from the crowds so community activities are only involved around the area. Coffee is one of the plantation commodities of Wanagiri Village which has a high economic value and plays an important role as a source of foreign exchange for the State. Coffee is known as a functional food because it contains antioxidant compounds and has radical scavenger activity. Indonesia is the fourth largest coffee exporter after Brazil, Vietnam, and Colombia (ICO, 2019). Bali is known as one of the most famous coffee-producing areas in the world. Coffee processing carried out by farmers and processing groups is generally very diverse. The processing process depends on the products to be made and the intended market share. Traditionally, rice coffee beans are produced in two ways, such as wet and dry processing (Sativa, et.al., 2014). The stages of processing coffee fruit into wet green coffee are harvesting optimally ripe coffee fruit (full red color), pulping (stripping the fruit skin), fermentation, washing, drying, and hulling. Another potential in Wanagiri Village is the Etawa goat (PE) Farm. The development of goat farming in Wanagiri Village until now there have been 6000 goats. Goats are scattered in the community, either in groups or kept individually.This farmer group sources Gliricidia sepium, river tamarind, and industrial waste from the locals in order to supply food for cattle or animal feed. The amount of forage is relatively abundant during the rainy season but scarce during the dry season.

Goats primarily consume forage, but the addition of supplemental feed (concentrates) is necessary for cattle to perform at their best. Animal feed forage is all forms of feed ingredients derived from plants or grasses as well as legumes, both uncut and cut from fresh materials. Forages include grasses (graminae) legumes and forages from several plants, including the leaves of jackfruit, hibiscus, cassava, and others. Crude fiber, energy, and protein sources are all subcategories of feed plants. Grasses (graminae) are categorized as sources of fiber and energy, whereas legumes (leguminous) are categorized as sources of protein (Muhakka, et al (2013). Forage always receives the biggest amount of the ruminant feed component, which is 60–100%. Some types of forage such as Indigofera, dwarf elephant grass, Biograss grass, Zanzibar grass, and Pakchong grass.

A tree legume, indigofera (Indigofera sp. tarum, indigo, or indigofera This plant has excellent productivity, is thick and leafy with good nutrient content, particularly high protein content, and can produce a natural blue color. Indigofera leaf meal has a nutritional value of 27.97% crude protein (including amino acids that correlate well in the rumen), 15.25% crude fiber, 0.22% calcium, and 0.18% phosphorus, as well as xanthophyll and carotenoid pigments. Indigofera is highly favored by ruminants and can be propagated by seed. The characteristics of Indigofera plants are that the height of the plant ranges from 3 - 4.5 m, has compound and odd leaves, when viewed more carefully resembles a bush and the seeds are pod-shaped. Harvesting of plants can be done optimum cutting at 0.75 -1.5 m from the ground. The cutting interval is 60-70 days depending on the denseness of the plant (Simatupang, 2013).

Odot grass, also known as Dwarf Elephant grass (Pennisetum purpureum cv. Mott), is a species of superior elephant grass that is native to the Philippines. This grass is widely appreciated by animals since it produces a respectable amount of grass, creates a lot of tillers, has strong roots, soft stems, and a lot of leaf segments and juvenile leaf structures. This grass grows to a height of around 1-1.5 m, yet each clump has 20–30 tillers. In poor fertility soil, this plant can thrive during the dry season. The harvesting phase in the rainy season lasts between 30 and 40 days, with multiple tillers of 20 tillers (Lasamadi, et.al., 2013). Protein makes up 12–14% of the dwarf elephant grass's nutritional makeup. The second planting pattern is by planting it between other plants. Breeding of dwarf elephant grass can be done by vegetative method, namely by using the branching that grows best. When the stem segment reaches 15 cm, this grass is typically harvested for the first time, which usually occurs when it is 70-80 days old. Furthermore, it can be harvested 35-45 days in the rainy season or 40-50 days in the dry season with a production capacity of 350 tons/ha/year (Agustina, 2011).

Pakchong grass is a high-quality variety of grass, initially cultivated by Prof. Dr. Krailas in the Pak Chong region of Thailand. It has a lifespan of up to 9 years and can be harvested every 40-50 days. Additionally, it is drought-resistant and non-thorny. The nutritional content of Pakchong grass is higher than Odot grass, especially the protein content which is 16.45% while Odot grass has a protein content of 13%. Pakchong grass production capacity of 1500 tons/ha/year (Suherman, 2021). Apart from the availability of forage, an effort is needed to be able to preserve the forage and feed it. In addition, the availability of superior seed forage does not yet exist to produce goats with optimal production, which requires High-quality animal feed that includes both forage and concentrates that Agro-industrial wastes can be processed into high-quality animal feed using techniques such as fermentation. With community service activities, the Sami Mupu Farmer Group and the Amertha Nadi Livestock Group hope to recognize technology and have knowledge of the diversity of animal feed forages, have skills in the provision and strategy of feeding forages through counseling, donation of forage seeds, demonstration of how to cultivate them and direct application to livestock.

The Feeding animals with the suitable and accurate type of food formulation is also needed in raising dairy goats, such as giving fermented feed in addition to feeding being durable can be durable as well as the difficulty of feeding in the dry season will be resolved by the fermentation method. Feeding with fermentation technology can increase body weight and the quality and growth of goats. Feeding for pregnant dairy goats requires 60% grass forage and 40% legume with supplementary feed with a crude protein content of 14-16%. A total of 0.5-1kg/day of concentrate feed can be substituted from tubers or tofu pulp or cemented industrial waste. In addition to utilizing existing forage, this activity also maximizes the plantation waste that is widely available there, namely waste from coffee. Coffee will produce coffee husk that can be used as a mixture of animal feed. With the development of coffee processing both on a small scale or industrial scale, of course, it will produce by-products from the processing of coffee, one of which is coffee skin waste. Coffee fruit processing produces 48% coffee skin waste, which can still be utilized for animal feed(Londra dam Andri, 2011). It is further explained Purwadigdo, et.al., (2005) that coffee skin should be used as a feed component in a formulation with other feed ingredients, so that it can meet the daily nutritional needs of sheep, especially in the adequacy of dry matter, digestible protein, and energy. Efforts to utilize fermented coffee skin are carried out by making fermented coffee skin as one component in the preparation of complete feed.

With community service activities, the group hopes to recognize the technology of making complete feed so that it can be used as a feed reserve when farmers are busy with cultural events.

Picture.1 The documentation of the survey to the partner location

IMPLEMENTATION AND METHODS

In this section the author needs to explain the method of implementation This service activity is an international PKM activity involving UiTM Malaysia as a material provider apart from the Animal Husbandry Study Program. Besides involving lecturers from UiTM Malaysia, it also involved six students from UiTM. Partners lack knowledge in the field of feed, especially the types of superior forage, as well as the proper ration formulation techniques that can be given to PE goats. The solution carried out to adjust the problems faced by the partners is the manufacture of complete feed for goats. This complete feed can be stored for a long time and can be used at any time as a backup feed when the need arises. The method to be used is the active participation of farmers and the explorative extension method. The output target to be reached is to increase farmers' knowledge of making complete feed for goat feed and correct feed formulation and increase farmers' skills in providing continuous feed.

PKM actions are implemented through a number of stages, including:

1. Activities and places to conduct demonstration plots.
2. Interviews and questions and answers about the problems faced by partners, as well as planning activities that show step-by-step techniques for solving the issues at hand.
3. Provide training in making complete feed by utilizing fermentation technology, so that farmers can make feed reserves to be used during the dry season and or can be used if needed in an urgent time
4. Provide feed formulation technology for goats.
5. Increase knowledge about processing forage and industrial waste as goat feed.
6. Providing feed ingredient processing equipment assistance.

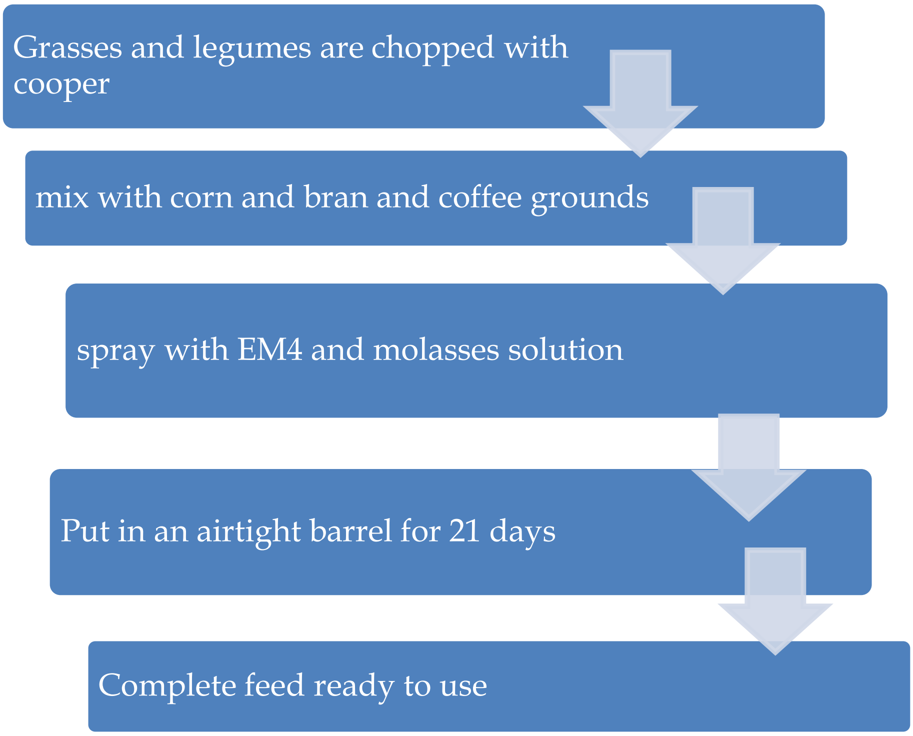
The smooth operation of this activity requires partner engagement in the implementation of PKM activities.

1. Partners are required to uphold any contracts that have been established.
2. Partners are expected to follow the activity plan diligently and with discipline until the finish.
3. Following the PKM exercise, partners can go on rearing goats fed entirely on silage.
4. Mentoring, evaluation, and monitoring will continue even after the PKM program has ended.

RESULTS AND DISCUSSION

1. Implementation of Activities

This community service activity was carried out in December involving community members from Wanagiri Village, Sukasada Subdistrict, Buleleng Regency, Bali. Farmers prepare the forage to be used which is prepared by the farmer, namely elephant grass, Gamal legumes, and coffee skin. Other additional materials and equipment are provided by us, such as bran, corn, fermenters, and molasses. Several barrels were also prepared that will be used to store the silage.



Picture 2. Flowchart for making fermented feed using vegetable waste.

Picture 2. Fermented feed-making activity

In making silages, three factors influence, which is:

1. Suitable forage for making silage are grass, sugarcane plants, wheat and con cobs, sugarcane tops, pineapple stalks, and rice straws.
2. Addition of additives to improve silage quality. Some additives are livestock waste (chicken and pig manure), urea, water, and molasses. Additives are used to increase the protein or carbohydrate content of feedstuffs and are usually used for low-quality feeds. High moisture content affects silage-making. Excessive moisture content causes mold growth and will produce unwanted acids such as butyric acid. Meanwhile, low moisture content causes higher temperatures, and silos cause a higher fire risk. Making silages at a temperature of 27 - 350C produces very high quality. This can be known organoleptically, such as: Have a fresh texture, Greenish in color, No odor and mold, Favored by livestock, and does not clump.

2. **Benefits Achieved**

The group gained knowledge and technology in the utilization of making complete feed using coffee waste that is abundant in the field into quality animal feed with a touch of fermentation technology. Participants' knowledge of fermented feed improved considerably. Before the training, only 15% knew about fermented feed, while after practice and training, their knowledge increased to 79%. In the implementation of the monitoring and evaluation, it turned out that many practiced making fermented feed, reaching 70% of the total number of participants. It can be said that this training is very beneficial because complementary feeding in the absence of manure odor can also increase the palatability and digestibility of feed.

3. **Obstacles and Supporting Factors**

a. Obstacles

The inhibiting factor in this activity is that this training activity is carried out during the ongoing Covid 19 pandemic, which results in limitations in the implementation of activities.

b. Supporting Factors

The key factor that drives this activity is the partners' enthusiasm and strong desire to improve their knowledge and skills in the area of animal feed of farmers to practice this complete feed as animal feed because, in daily life, a lot of waste and greenery has missed its harvest period, so because the age is old, the quality automatically decreases. There are also many traditional activities, so the presence of this fermented complete feed can be a solution if they are pressed for time.

c. **Solutions and Follow-up**

The making of complete feed silages will continue to be done as a feed bank that can be used at any time so that it will be very easy to provide for livestock. When forage is plentiful and agricultural waste is abundant, farmers can work together to prepare this complete feed silage, to be used as a feed reserve when needed.

d. The Next Plan

This training activity will be continued with good mentoring. Assistance activities to livestock groups will continue to be carried out so that livestock groups can make this complete feed properly.

e. Strategic Steps for Further Realization

Strategic steps to realize the next plan is assisting groups in fodder preservation technology when forage production is abundant in the rainy season. With this technology, In order to avoid having to mow the grass during traditional or religious activities, it is hoped that partners would have an enough supply of high-quality feed.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions that can be derived from this community service project have gone off without a hitch. The livestock groups in Wanagiri village have access to exceptional forage, are experts at formulating rations from it, and are aware of the nutritional requirements of Etawa Breeding Goats. Almost 80% of people can use technology, thus it's vital to assist the group again when cutting the first and second cuts and making complete feed (complete feed) as a feed reserve can run well.

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