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# Introduction of Superior Feed Forage to Improve Feed Nutrition and Livestock Productivity in the "Sekar Pasti Wangi" Livestock Farmer Group, Petiga Village, Marga District, Tabanan Regency

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**A B S T R A C T**

The partner in implementing this PKM (Community service) is the Sekar Pasti Wang Livestock Group located in Banjar Seminyak, Petiga Village, Marga District, Tabana Regency. This group raises 20 cows with 19 members. Partners have problems not havin information about superior types of animal feed forage, understanding and skills regardin feed forage cultivation technology, and how to feed livestock. With this understanding an skills, it will be able to increase the nutritional content contained in the feed both in qualit and quantity which has an impact on increasing livestock production. The goal to be achieve is to provide an understanding of nutrition by applying forage cultivation technology a animal feed that can take place evenly throughout the year. *The Sekar Pasti Wangi* Livestoc Farmer Group already knows some superior forage, mastering its cultivation technology ration formulation, and understanding and understanding the nutritional needs of cow Mastery of technology is almost 80%, so it is necessary to assist again to the group at th time of the first, and second slaughter and forage treatment of feed and serving technique so that forage remains of good quality. From the community partnership program that w carry out, it can be concluded that partners know the types of feed forage by 80%. In additio there is an increase in livestock productivity of 0.3-0.4 kg/head/day can be seen from th growth performance, so it is expected that partner income will increase.

## *1.* INTRODUCTION

### *1.1. Research Background*

Petiga Village is one of the villages in the clan district, located ± 17 km to the north of the city center of Tabanan. Petiga village has an area of 282 ha with boundaries north of Tua Village, east of Perean and Kuwun villages, south of Geluntung Village, and west of Payangan Village.

Petiga village consists of 3 banjar dinas namely: Banjar Dinas Petiga Kangin, Banjar Dinas Belamban and Banjar Dinas Sumingan [1]. The population of Petiga Village until 2016 was 1,792 people consisting of 877 men and 915 women. Judging from the geographical conditions of the Petiga Village area, it is a high level with an altitude of ± 500 meters above sea level. The air temperature ranges from 300 C, with an average rainfall of 2000 mm/year[1]. The agricultural potential of Petiga Village is intended as paddy fields and part of it is an engraving plain that is intended as community plantation land.

The Bali Provincial Government 2009 has developed the *SIMANTRI* (Integrated Agricultural System) program, which is a breakthrough effort in accelerating the adoption of agricultural technology, which is the development of a pilot model in accelerating the adoption of technology in rural communities. Symantec's targets include livestock population, fisheries, and yield quality, the availability of quality animal feed throughout the year, and the availability of organic fertilizers and pesticides, and biogases [2]. The pattern of integration of crops and livestock based on food crop agriculture, animal husbandry, plantations, fisheries, and forestry will gradually increase crop production, waste processing into fertilizers, and biogas which become an additional source of income for surrounding groups and poor people [3]. Simantri's goal is to alleviate poverty, reduce unemployment and improve the welfare of farmers and rural communities.

*Simantri* livestock farmer group Sekar Pasti wangi is a *Simantri* group found in Petiga Village in Banjar Semingan. This group was founded in 2016 with 19 members and 20 livestock raised. Most of the fodder forage given to livestock is still in the

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form of local grass or natural grass either from rice fields, plantations, roadsides, or in moorings that are of low quality.

### *1.2. Literature Review*

Forage feed is the main feed for ruminants, especially cattle. Fodder forage is any form of feed material derived from plants or grasses including legumes both unwritten and cut [4]. One of the factors that determine the productivity of ruminants is the guaranteed availability of quality forage feed, efforts to increase nutrition, and livestock productivity inseparable from efforts to improve natural pastures.

The introduction of clumps and legumes that are deliberately imported from abroad, because they have the advantages of local grass, especially from its yield and quality. Usually, this grass is relatively large, grows upright, and has higher endurance or productivity, so it is called superior grass [5]. Mixed planting between grass and legumes is better than with grass plants alone, because, in addition to protein, legumes also contain higher phosphorus and calcium [6]. Some types of forage such as odot grass, pakchong grass, and Indigofera contain high nutrients, are easy to cultivate, and are able to adapt to natural conditions.

Odot grass (Pennisetum purpureum cv. Mott.) this grass is one of the varieties of the elephant grass species. This grass has a fairly high productivity, contains crude protein of 12-14 %, the degree of digestibility is 65-70 %, crude fiber is 33.5 %, the stem is relatively short and tender, the growth is fast, the leaves are soft and hairless, the grass height is 1-1.5 m and in one clump there are 50-80 stems.

The planting can be planted with odot grass only or combined with other feed forage. In the rice field or between plantation plants, the distance of the plants in rows is 50-75 cm, planting the distance between the rows of 75-150 cm. Harvesting is the first time at the age of 70-80 days when the stem internodes reach 15 cm. Further cut 35-45 days in the rainy season and 40-50 days in the dry season. For the first time harvesting should be more than 60 days or wait until the stem is 30-40 cm [7].

Pakchong grass is one of the superior grass types which is a cross between elephant grass and pearl millet. Pakchong grass production is 250-275 tons /ha/yr, crude protein content is 16-18%, has a planting and harvesting age of up to 9 years, harvested at the age of 90 days after planting with an intensity of mowing the grass once every 40-60 days [8].

The Indigofera of this plant belongs to the Leguminosae of the tree. Very potential as a source of animal feed ingredients, with a high protein content of 26-31%, low crude fiber, and a high digestibility rate of 77%. It can be harvested for 3-4 months and then harvested again every 90 days until the plant is no longer productive or the age reaches ± 3 years. The first harvester is 60 days after planting by pruning whose height is 1 m from the ground, the harvester is next every 60 days after the previous pruning [8].

### *1.3. Applied Research Objective*

With the advantages of these types of forage feed, we hope that this livestock group as a partner will know superior types of forage, and have skills in their cultivation through counseling, donation of seeds, making plots, how to cultivate them and how to give them to livestock which has an impact on improving feed nutrition and livestock productivity.


Figure 1. The Condition of the Partners of the Sekar Livestock Farmer Group Must Be Fragrant

Figure 2. Partners forage in plantation fields, forage feed is given and ways of feeding on livestock

## 2. MATERIALS AND METHODS

### *2.1. Implementation Methods*

The method of implementing PKM activities will be carried out in several stages using the method:

1. Surveys, interviews, and discussions with potential partner locations to find out the situation and problems of partners
2. Set partner locations and proposal creation
3. Face-to-face method and providing direct counseling so that partners know, understand, and master the process of cultivating superior animal feed forage such as Indigofera, odot grass, and pakchong grass.
4. Hands-on practice is guided by instructors who are competent in their field so that partners can directly apply the methods given to livestock.

### *2.2. Activity Plans and Procedures*

Plans and Procedures for PKM Activities implemented are:

1. Approach to partners, selection of places as well as having participants, who will then be referred to as trainees.
2. Interviews and Q&A about the problems faced by partners, once again planning activities that show steps to solve the problems faced.
3. Partners will first be given material prepared by the team in the form of modules (leaflets) regarding the types of ways of cultivating forage in livestock.
4. Conducting counseling and handing over seeds (*indigofera, odot grass, and pakchong grass*) as well as implementing plots.
5. Conduct periodic assistance and monitoring during the activation process, as well as evaluate results.

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If the implementation of the activity is to end, several tools will be handed over to support and facilitate the process of cultivating Indigofera, odot grass, and pakchong grass.

### *2.3. Partner Participation*

A total of 10 members of the group were trained in the cultivation of superior fodder forage in livestock. The PKM team donated superior feed forage seeds for animal feed, namely *indigofera, odot grass, and pakchong grass*. Partners directly practice the cultivation of forage seeds of superior animal feed and the harvest is directly given as cattle feed.

## 3. RESULTS AND DISCUSSION

### *3.1. Implementation of Activities*

Community service activities begin with counseling in the form of providing material on the types of forage cultivation methods for livestock. Counseling and direct practice activities will be carried out on May 8, 2022. Before continuing with the making of the plot, the PKM Team donated tools and seeds for foraging superior animal feed.

Figure 3. Providing material on the types of forage cultivation methods in livestock

Figure 4. The PKM team raises tools and forage seeds for superior animal feed for livestock

The activity continued with the direct practice of making plots and planting superior fodder forage seeds. The donated seeds are *Indigofera, odot grass, and pakchong grass.* Fodder forage is then given as cattle feed by the group.

Figure 5. Participants in preparing the demonstration plot

Figure 6. Superior fodder forage from group cultivation.

### *3.2. Economic Impact*

*Simantri* livestock farmer group *Sekar Pasti Wangi* has cultivated forage superior animal feed livestock and given it to cows as the main animal feed. The use of weeds as animal feed has been reduced. After the implementation team provided partner counseling, the knowledge of the types of feed forage increased from 40% to 80%. Increased nutrition of animal feed forage (protein) from 6.7% to 16.45%. The provision of superior animal feed for livestock can increase livestock productivity by 0.3-0.4 kg/head / day can be seen from the growth performance, so it is expected that partner income will increase.

## 4. CONCLUSION

From the community partnership program that we carry out, it can be concluded that partners know the types of feed forage by 80%. In addition, there is an increase in livestock productivity of 0.3-0.4 kg/head/day can be seen from the growth performance, so it is expected that partner income will increase.

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