PROCUREMENT OF KALIANDRA SEEDS FOR HONEYBEE FEED IN PRAHU PADUKUHAN

Saddam Husein Nasution

UIN Sunan Kalijaga Yogyakarta

Abstract *- Kaliandra (Calliandra calothyrsus) is one type of plant that can be used as an alternative raw material to support honey bee cultivation. Calliandra plants have flowers that can last a long time and have a high nectar content. It can be used as a source of nectar for bees to produce quality honey. This factor makes calliandra the preferred vegetation for honey bee cultivation in Padukuhan Prahu, Gunungkidul. Calliandra plants can grow in the lowlands and highlands. Therefore, calliandra is very suitable if planted in the area around Gunungkidul, especially in Padukuhan Prahu, Kalurahan Girimulyo, Kapanewon Panggang.*

Keywords*: Kaliandra, honey bees, Padukuhan Prahu Gunungkidul community.*

1. INTRODUCTION

Bees are honey-producing insects that have long been known to humans. Since ancient times, humans have hunted bee hives in caves, tree holes, and other places to take their honey. Bees also produce products that are needed for the world of health, namely royal jelly, pollen, wax and so on. then humans began to cultivate it by using materials from wood logs. In its development, currently honey bee cultivation can use a setup system.

Indonesia is one of the centers of beekeeping that still exists today. Most of them are located on the island of Java which includes East Java, Central Java, and West Java. The amount of honey produced can reach around 2000-2500 tons specifically for bee cultivation. In addition, Kalimantan and Sumbawa are centers of honey production from wild bees that live in the forest. The world's bee keeping centers are in the Commonwealth of Independent States, Germany, Australia, Japan and Italy.

There are several things that need to be prepared in honey bee cultivation including: Location of cultivation, modern bee cages (setup), work clothes and other equipment. The main requirements that must be met in honey bee cultivation are the presence of a queen bee and thousands of worker bees and male bees in one colony. Another requirement is that the beekeeper must be careful when checking the setup that has been filled in by the bee colony. This is so that there are no two queens in one colony, if this happens, there will be fierce competition between queens for the position as leader of the colony.

Honey bee cultivation is an activity that was initiated by the community in Padukuhan Prahu. This is because it can improve the economy of the people there. Most of the people's income in Padukuhan Prahu comes from the agricultural, livestock, and cottage industries. The existence of a location surrounded by mountains and highlands as well as the availability of large enough land allows the community to open cultivation land. In addition, they can also use the land as a side business, such as animal husbandry, agriculture, and forestry. Therefore, the community utilizes part of the land they have for honey bee cultivation. In addition, it is also used to plant plants that support the development of honey bees such as kalindra, longan, and sunflower.

Calliandra is one of the plants belonging to the leguminosae group and is widely used by breeders as feed ingredients. Kaliandra is quite potential to be used as animal feed, because this plant has a protein source of 20-25% (Willyan et al., 2007) in (Abqoriyah et al., 2015). Calliandra plants have long-lasting flowers and high nectar content so that they can be used as good nectar supply plants for honey bees. So thereforea mutually supportive relationship is needed between the morphological characters of flowers and insects in searching for nectar and the "intermediate" task of bees as pollinators. That way can form a mutually beneficial relationship to get optimal results.

One bee colony contains at least 30 thousand to 60 thousand worker bees which are the smallest in size when compared to the queen and male bees. His job

is to build a beehive as a place to lay eggs for the queen bee, collect food (in the form of nectar, pollen and water), feed the queen and male bees, guard the hive from enemies, and clean the hive. While the male bee is a bee that is larger than the worker bee, but not bigger than the queen bee. There are only hundreds of male bees in a colony. His job is to marry the queen bee so that the colony can grow in number.

In short, the honey bee life cycle includes a queen bee which has worker bees and male bees that live together to form a colony. Then hundreds of male bees will fight over one queen bee to mate. This process is characterized by the queen bee flying high, then being chased by the male bee. One male bee that manages to chase the queen bee will carry out the fertilization process. After mating is complete, the male bee will usually die. Next, the queen bee will lay eggs and leave the eggs in the nest. The eggs will develop into larvae and hatch into bees for approximately 43 days. The newly hatched bees consist of the same three types of bees as before, namely; queen bees, male bees, and worker bees.

2. METHOD

The method used in this activity is to carry out a qualitative descriptive approach designed to collect information about current real conditions. The technique used is to analyze the condition of the community, the ability and understanding of the community towards honey bee cultivation in Padukuhan Prahu. At that time the activity was carried out on August 5, 2021 at the house of Mr. Suhardi (chairman of RT 4) as well as the first person to pioneer honey bee activities in Padukuhan Prahu.

The activity was attended by around 15 residents and members of the Yogyakarta Environment and Forestry Service who handed over 100 boxes of Kelulut Bees and one box of Lancing Bees to the Prahu Hamlet community. In addition, students from KKN 105 groups of 177 UIN Sunan Kalijaga Yogyakarta also handed over 50 Kalinda seeds and 5 Longan seeds. The aim is as a form of student support for the spirit of the Prahu Hamlet community in developing honey bee cultivation.

This activity also uses the method of socialization to the community in Padukuhan Prahu. This is used so that people are able to be involved in the social world and are able to develop themselves with various existing facilities. It is hoped that with the socialization related to the great benefits and opportunities in honey bee cultivation, the community will be more enthusiastic in developing the honey bee livestock. The benefits will be felt someday because it can increase the standard of living and income for the people there.

This socialization facility provides a lot of information that can add insight to understand human existence and various problems that exist in the surrounding environment. By providing an understanding to the community about honey bee cultivation with various processes, of course this adds to the community's knowledge so that they can be more productive and able to improve village

welfare.Through honey bee cultivation, people are encouraged to be able to take advantage of the natural surroundings to improve their standard of living.

It is certain to take advantage of it by always maintaining and preserving the surrounding nature so that it can be mutually beneficial. The benefits can be felt when the honey bee cultivation can produce good quality honey. Hope in the future can Motivating the public to be motivated to cultivate honey bees as a new commodity that is useful and improves the economy, especially during the current Covid-19 pandemic.

3. RESULTS AND DISCUSSION

The implementation of the program for the procurement of plant seeds for honey bee feed is one of the work programs in the social community sector. Therefore, in the implementation of this activity, students from class 105 group 177 did observations first. In addition, it also seeks valid information so that the work program designed is in accordance with the potential and needs of the community. Procurement of plant seeds to support honey bee cultivation is a form of contribution from group 177 KKN students to the community.

Most of the community activities in Padukuhan Prahu are farming and raising livestock. One of their livestock activities is honey bee cultivation. This activity is a flagship program designed by Mr. Suhardi as the head of RT 04. This is because he is quite qualified in terms of honey bee farming, which was later developed and socialized to residents in Padukuhan Prahu.

Livestock farming is one of the business opportunities that many novice entrepreneurs are looking for. Honey bee farming has several advantages over other livestock cultivation. First, this business does not require feed that drains capital in the maintenance of honey bees. Because honey bees will find their own food. Honey farmers are not bothered with feeding which is usually regularly scheduled. Second, in honey bee cultivation, there is no stage of marrying two honey bees intentionally by business actors. Honey bees will undergo a natural mating process in their own way. So that honey bee farming is easier to implement.

Furthermore, the yield of the honey bee farming business is very promising. The selling price of honey per kilogram is Rp. 80.000,00 to Rp. 90.000,00. This honey bee farming activity is supported by the Gunungkidul Environmental Service by donating 100 boxes of honey bees. The honey bees provided by the Gunungkidul Environmental Service are the Kelulut Bees and Lanceng Bees. In addition, they also provide direction to the community regarding honey bee cultivation and the process. Of course, this is a new opportunity for the Prahu people to develop productivity for honey bee farming activities. This of course can be a supporter of the community's economy.

Figure 1: Kelulut Bees

The honey bees obtained will later be distributed to all residents in Padukuhan Prahu. The distribution of honey bees and installation in every house is monitored directly by Mr. Suhardi. This is done in order to minimize errors when placing the "home" of the honey bee. In addition, before being distributed to the public, the setup boxes containing the honey bees are checked first. This is done to ensure the presence of the queen bee. If the queen bee is not in one colony, it is feared that the other bees will run away and cannot produce honey.

To support community activities in Padukuhan Prahu related to honey bee cultivation, KKN group 177 students seek to assist in the development of the cultivation by procuring seeds. The seeds donated by group 177 colleagues were calliandra and longan seeds. In addition, all members of the KKN group 177 also helped in planting the seeds in Mr. Suhardi's yard. In addition, seed planting is also carried out along the RT 04 area road. The seed planting activity will be carried out on August 8, 2021.

Picture 2: Photo with members of KKN 105 and honey bees cultivation leaders.

Picture 3: Handover of Calliandra dan Longan Seeds to Mr. Suhardi.

Picture 4: Planting Longan Seeds with Mr. Suhardi.

Even though the planting of Kaliandra and Longan seedlings has been carried out, the KKN group 177 students are still monitoring the progress of the growth of the seedlings. In accordance with the observations, Kaliandra that has been planted is growing well. Because the growth of this plant takes a long time to flower, it is not possible to record how much Kaliandra contributes as honey bee feed. This includes the effect of Calliandra flower nectar on the quality of honey.

Calliandra plants are very good to be used as animal feed, especially honey bees. This is because Kaliandra has flowers that can grow and last long enough. In addition, Kaliandra flowers contain good nectar for honey production. Researchers say that there is a protein content of 20-25% in the nectar of Kaliandra flowers. Therefore, the KKN students of group 177 chose Kaliandra as a plant that was donated to the community who were cultivating honey bees.

With the Calliandra plant, worker bees can take nectar from the flowers, so they can produce high-quality honey. Especially if you can produce royal jelly which has a high economic value. This is because royal jelly is very beneficial for humans, both in the fields of health and beauty. When people in Padukuhan Prahu can take advantage of and develop honey bee cultivation, little by little the level of the

economy there can improve and even increase. Utilizing and maintaining the surrounding environment can provide mutual benefits and great prosperity for all.

4. CONCLUSION

Procurement of calliandra and longan seeds as feed is very useful for the survival of the honeybees cultivated by Mr. Suhadi as the head of the RT.04. Because calliandra seeds have flowers that can grow and last long enough. In addition, Kaliandra flowers contain good nectar for honey production. While the longan plant is also believed to have 2 directions of benefits other than the flowers to feed honey bees, longan also has fruit that is rich in benefits and has a sweet taste that can be consumed by the Prahu village community, especially Mr. Suhadi, the owner of honey bee slag. So that the presence of nectar-producing plants is able to increase the amount of honey produced by bees and can increase the income of the community.

Not only that, by utilizing existing natural resources, it is able to have a positive impact on all parties in the future. So it is proven that the procurement of calliandra and longan seeds provided by KKN Group 177 students has positive benefits and is able to improve people's lives, because it is seen from existing sources of seed plants increase the quantity of honey produced by the bees.

Based on the results of our observations, there are several limitations experienced and can be a factor that can be given more attention to future researchers in order to further refine their research. Because this research itself certainly has shortcomings that need to be improved, one of the limitations obtained is that the sources of data or references obtained are limited, so they are still lacking to explain the actual situation.

Therefore, it is recommended for further research to be able to reproduce references from both journals and direct interviews, with the aim of better data accuracy in research. Furthermore, conducting continuous research, this is in order to be able to see and assess any changes that will be produced by bees with the presence of these seeds from time to time. Hopefully this research will be able to increase the reader's knowledge regarding honey bee cultivation which is given calliandra and longan plant seeds as food.

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