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ABSTRACT

The purpose of this paper is to overcome the Keong Mas pest attack on rice plants and the use of Keong Mas for duck feed. The implementation of the Regional Partnership Program (PKW) was carried out in Subak Paang. The method used is counseling, training and mentoring. The result of the implementation of the Regional Partnership Program is that the Keong Mas pest can be handled manually by collecting it every day, so that the cost of purchasing pesticides to eradicate the conch pest can be reduced. Ducks that are given additional feed from Keong Mas are able to lay eggs for up to 5 months, farmers get additional income from selling duck eggs Rp. 189,000 / month to 315,000 / month.

Keywords: Rice, Snail, pest, rice field, duck

I. Introduction

Rice is one of the foods that contain enough nutrients and boosters for the human body because it contains ingredients that are easily converted into energy. Therefore rice is called an energy food. Besides that the increasing number of people and the shrinking land that is increasing every year so that the need for food in the form of rice also increases so that the government seeks to increase rice production through the expansion of planting areas carried out outside Java and increasing rice productivity. In order to increase the productivity of rice plants, one of the factors that inhibits the existence of Plant Pest organisms (OPT) which attack rice plants. The main pests in rice include mice, stem borer, WBC, Tungro, BLB, and keong mas.

In Bali, the presence of golden keong pests is not yet worrying, but if the pest is not properly and properly controlled, it will potentially become the main pest, as happens in other areas which almost every year the problem of snail snails pests. Pests from the mollusk group are very potential to be the

main pest because they multiply rapidly and attack young plants.

Keong mas (*Pomacea canaliculata* Lamarck) (Gastropoda; Ampullaridae) there are also those who call mulberry snails one of the types of freshwater snails originating from the Americas, it is not clear when they enter Indonesian territory. The snail mas was freely marketed in 1981 in Yogyakarta and in Japan in 1964 had been sold as ornamental fish because of its attractive shape and color. There are a lot of golden snails that are sold to the people, so the spread of mas snails is increasingly widespread because of its rapid development.

Besides that, there are many snails that are cultivated in ponds, so many run into rice fields. Besides snails, the color is very interesting, the nutritional value is high enough that every 100 grams contains 64 kcal of calories, 12 grams of protein, 2 grams of carbohydrates, 1 gram of fat, and a number of minerals such as iron, phosphorus and calcium. At that time, the weak supervision of the presence of keongmas in Indonesia was exacerbated by the frequent occurrence of floods which accelerated the



rapid spread of golden snails. Potential snail mas can cause damage to crops ranging from 10 - 40%, the spread area in Indonesia, including Java, Sumatra, Kalimantan, NTB and Bali.

The extent of the attack that is now a serious rice pest in Southeast Asian and East Asian countries, due to damage to young rice seeds (Halwart 1994, Naylor 1996, Yusa and Wada 1999). At present the damage is still very low but the future period needs to be watched out for the presence of golden keongpests due to very fast development and growth. The snail mas is very fond of a clear environment, has a water temperature between 10 - 35 C, thus it is very suitable for mountainous areas to the coast. Thus it is easily found in paddy fields, reservoirs, situ, swamps and puddles. The snail mas is an all-eating and very greedy herbivore, a plant that is favored by young and soft plants such as rice seeds, vegetable plants, and water hyacinth. If the habitat is in a state of lack of water, the snail will immerse itself in deep mud, this can last for 6 months. If the habitat has water, the snail will reappear when processing land. Keong Mas have sex, namely male and female, unlike other types of snails. Keong Mas are ready to do copulation when water conditions are met in the rice fields.

For paddy farmers in the Subak Paang Penatih, keong mas are pests that damage rice plants and can even frustrate the grain production target to be achieved. Understandable because snail attacks are very powerful as fast as population development and as high as the protein content they have. Some farmers take instant ways without consideration of environmental sustainability in finding solutions to the problems they face, such as using samponi, which seems to help overcome the problem but behind it actually leaves soil damage.

Everything that is created certainly has a meaning and every poison is certainly a bidder, as well as Keong Mas, as beautiful as the name and color also provides benefits even though it begins with anxiety, what is needed is a little time and energy to manage the potential of pests as sources of animal protein for supporting commodities namely livestock duck. High protein content in golden snail meat and mineral source content in the shell, can be used as feed ingredients for duck feed formulations.

II. Implementation Method

The method used for farmers in Subak Paang, is counseling, training and mentoring, in detail as follows: (1) counseling and assistance and control of Keong Mas pests; (2) training and assistance in utilizing Keong Mas for duck feed. To measure the success of counseling and training, before and after the activities carried out pre-tests and postings, the results will be measured the

success of each activity activity, whether the material provided is understandable or not, and whether it needs further exploration has been given to farmers. A visit was conducted to monitor Mas snail pest attacks and the use of golden keong as duck feed.

III. Results

Counseling and assistance and control of Keong Mas pests. Keong Mas including phylum moluscata, animals including moluscata are generally not broad, soft-bodied, and emit mucus, these animals at night mollusks foraging and during the day hiding. Preferred foods eat organic ingredients and plants that are still alive, especially young plants. The tool to eat is shaped like a rough tongue called the radula. There are two kinds of Molluscs, namely those that have a house usually called snails, chopsticks, snails and those who do not have a house (protector) or a dwarf house usually called a snail. Keong are generally hermaphrodite, have male and female genitals, but often the two animals are seen holding a marriage with each other. There are also keong (*Pomacea canaliculata* Lamarck) (Gastropoda; Ampullariidae) which call mulberry snails one of the types of freshwater keong originating from the Americas. In Figure 1 t, adult Keong Mas are displayed in the rice fields of Subak Paang which are ready for generations.



Figure 1 Adult snail ready for generations

Keong mas is very fond of a clear environment, has a water temperature between 10 - 35 C, thus it is very suitable for mountainous areas to the coast. Thus it is easily found in paddy fields, reservoirs, swamps and puddles. The snail mas is an all-eating and very greedy herbivore, a plant that is favored by young and soft plants such as rice seeds, vegetable plants, and water hyacinth. If the habitat is in a state of lack of water, the snail will immerse itself in deep mud, this can last for 6 months. If the habitat has water, keong will reappear when processing land. Keong Mas have sex, namely male and female, unlike other types of snails. Keong



Mas are ready to do copulation when water conditions are met in the rice fields.

Many natural enemies can suppress keongmas pest populations, including natural enemies of snails namely *Gonaxis* and *Euglandina* predators, *lamprochorus* fireflies and *Aeromonasliquefacicus* bacteria also attack snails, Birds,

How to Control Keong Pest

Mechanically, the eradication of keong mas pests is carried out by: (1) Collection / taken periodically 3 times a week and destroyed by the group of eggs which are then destroyed with wood / bamboo; (2). At the water entrance: use a 5 mm mesh filter installed on the inlet gate on the embankment to minimize the entry of mas snails into the fields and facilitate collection by hand; (3). Plant old seedlings, age > 21 days and plant more than one seed per clump (4 to 5 stems / clumps); (4) for caren / canal / ditch 2, in and around the plot of rice fields. So that after dried keongmas gather, so easy to take; (5) Installation of bait on the edge of the embankment so that the snail mas can gather and then taken and destroyed, the preferred keongmas food such as papaya leaves, cassava. Biologically the eradication of mas snail pests by releasing ducks and making egg traps, for example originating from bamboo blades as a place for laying keong eggs, or using predators or parasites, chemically the eradication of mas snail pests is carried out by using pesticides which are made from active niclos amide and botanical pesticides such as *lerak*, *deris*, and *saponine*. Which is flooded in caren or in hollows where there is water where snail mas gather.

Training and assistance in utilizing Keong Mas for duck feed

Increased Keong Mas pest attack on rice plants in SubakPaang. Farmers try to control it by picking it up almost every day. The results of Keong Mas levies are thrown away, with the presence of the Regional Partnership Program in SubakPaang, offered alternatively, the use of Keong Mas as duck feed. Which during this time the golden snail in the rice fields is a rice pest that is very detrimental to the farmers in the SubakPaang. Farmers are not accustomed to raising ducks in the rice fields, because the farmers of SubakPaang agriculture are not the main livelihood, agriculture is a side job. So that the idea arises, ducks do not have to be grazed in the fields but are kept in the homes of each farmer, and Keong Mas which is collected every day is brought to the house for duck feed. Figure 2: the condition of the duck is kept at home, usually ducks that are kept in small-scale businesses range from 3 to 5 ducks for every farmer.



Figure 2. Small scale of 3-5 animals maintained

Feed from Keong Mas is given as an alternative feed as additional food, and the main feed given by farmers is leftover rice, in SubakPaang farmers have the habit of utilizing leftover rice to feed for pets at home, especially in SubakPaang and in Bali generally abstaining from food the rest especially rice. The use of conch mas for duck feed, done in an easy way, keongmas is crushed to the shell with a large knife, then directly given to the duck as additional feed. When given to duck feed it turns out that this golden snail is very good, and proves the duck is able to lay eggs for up to 5 months from the start of the try. Actually, if farmers want to develop duck farming as a wider scale business, it can easily be done, there will be no difficulties in using Keong Mas for their feed. The process of making alternative feeds made from golden snails is very easy and very simple, just by grinding the golden snail in a subtle manner and then mixing it with the manufacturer's feed can be eaten directly by hundreds of pet ducks.

By using feed from this golden snail mixture it turns out that the duck is able to lay eggs continuously for up to two months. Farmers in SubakPaang had never raised ducks before, and now they are raising 3-5 ducks. Farmers get additional results in the form of 3-5 eggs every day. And if calculated the price of duck eggs in the local market in Bali is Rp.2,100 / item, means farmers get additional income every day reaching Rp.6,300 to Rp.10,500 / day or Rp.189,000 / month 315,000 / month until the results of the implementation of the Regional Partnership Program (PKW), farmers get additional income from duck eggs, and mas snail pest attacks can be controlled, as shown in Figure 3 can thrive free from the attack of snail mas pests





Figure 3: 2-month-old rice free from Keong Mas attack

IV. Conclusion

The result of the implementation of the Regional Partnership Program is that the Keong Mas pest can be handled manually by collecting it every day, so that the cost of purchasing pesticides to eradicate the conch pest can be reduced. Ducks that are given additional feed from Keong Mas are able to lay eggs for up to 5 months, farmers get additional income from selling duck eggs Rp. 189,000 / month to 315,000 / month.

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