

## CAPTIVE OWL (*Tyto Alba Javanica Gmel*) AS AGENT FOR BIOLOGICAL PEST CONTROL RATS FIELD (*Rattus Argentiventer*) IN GROUP FARMERS OF MOJOANYAR SUB DISTRICT, MOJOKERTO DISTRICT.

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### ABSTRACT

The purpose is to develop lbM owl population in rice farmer groups and Sri Rejeki Harapan Jaya district of Mojokerto, sub district Mojoanyar as pest predators field rat, so that rice production increased.

Specific targets to be achieved is the availability cage (owl) as a shelter and breeding, so that the population is increasing. The methods used are:

- a. Offering solutions to farmers' groups to jointly conduct field rat pest bioavailable by utilizing the owl.
- b. Doing breeding owls by making cage of owl.

Plan activities are as follows:

- a. Preparing equipment and materials for breeding owls the manufacture of cage.
- b. Conduct knowledge transfer (transfer of knowledge) skills on the development of an owl.
- c. Installation cage as a refuge and breeding birds ghost in the fields.

Results have been installed 8 gupon and 16 owl seat, everything is occupied by owls and rats pest attacks decreased from an average of 6.21% to 0.71% and rice production increased from 6.46 ton/Ha to 7.75 ton /Ha.

### INTRODUCTION

Sub District Mojoanyar, Mojokerto district there are two groups of farmers who develop owl (*Tyto alba javanica*), a group of farmers HARAPAN JAYA in the village Wunut and SRI REJEKI farmers group in the village Ngarjo. The farmer groups manage expanse of land for rice crops covering an area of 221 hectares. In accordance with the surrounding natural resources, provided enough owl populations are not managed properly so that his move in accordance with the availability of prey. With do captivity expected to support the biological control program against rodents in an integrated pest in rice plants. In an effort to maintain production of paddy farmer groups in the village Wunut and Ngarjo was done many joint motion for pest control rat, for example by looking for it together, installing rattraps, destroying burrows of rodents, collect rats with gifts and etc. Many efforts are apparently less than the maximum result for the long term. Control mice integrally comprises: a method of prevention (reduction of habitat and shelter), mechanical methods together, control is biological (support the role of predator owl), and chemically by using poisoned bait (Kasumbogo Untung, 1995; Moh. Sodik, 2001 and Priyambodo, 2003). Although all methods have been used together with the existing environmental conditions the utilization of predator owl seems an appropriate method in order to support an integrated pest control mice for the long term. This is evident in the last five years can be suppressed pest rodents that rice production can be maintained.

The year 2010 has been established gupon of 4 pieces and each year each group seeks to increase and improve. Initially gupon made of bamboo so quickly broken. At the moment it is installed gupon much as 9 pieces village Wunut and 4 Ngarjo village.

The purpose is to develop lbM owl populations in the region farmer groups Harapan Jaya and Sri Rejeki as a field rat pest predators, so that rice production increased.

### METHOD OF EXECUTION

#### 1. Method

Science and technology program for people offers a solution by bringing farmers' groups to jointly perform biological pest control is a mouse. The initial stage is done breeding owls at 2 farmer groups and provide an explanation that is biological control is very important, efficient, effective and environmentally friendly.

#### 2. Action Plan.

- a. Setting up the equipment and materials for the manufacture of breeding owls gupon.
- b. Conduct knowledge transfer (transfer of knowledge) skills about the development of an owl.
- c. Installation gupon as a refuge and breeding owls.
- d. End of science and technology for society program was evaluated by means of:
  - 1) Gupon produced and installed in-field after getting the transfer of technological knowledge and skills.
  - 2) Placement of owls bred in captivity into gupon as a nest in paddy fields.

- 3) Maintenance gupon as shelter owls for durability.

### 3. Implementation.

Farmer groups Harapan Jaya and Sri Rejeki respectively who live in the Wunut village and Ngarjo as implementing the program:

- a. Following the transfer of activities knowledge and skills breeding owls.
- b. Make gupon as Owl's Nest.
- c. Implement gupon placement in rice fields.
- d. Maintaining gupon as Owl's Nest for durability.
- e. Maintain / promote the conservation of owls as biological pest control agents field rat.

## RESULTS AND DISCUSSION

### 1. Transfer Science.

Has implemented the transfer of science and technology owl on farmer group Harapan Jaya and Sri Rejeki. Farmers feel more secure in

developing owls to control pests field rat. Initially the farmers are still hesitant to develop owls, because there is still a myth that the presence of the owl would be a catastrophe for the people of the village.

### 2. Installation Gupon.

In the village of Ngarjo and Wunut cage of owls made of wood and bamboo, so easily damaged. With the addition of 8 gupon and 16 owls seat from lbM made of camphor wood and poles from the water pipes, gupon expected lifespan is longer, so the owl's life would be quieter. Gupon installed in the rice field with a distance of 150-200 m, as well as all gupon already occupied by owls.

### 3. Attacks of Rat.

The results of the evaluation of breeding owls against attacks and loss rat in Harapan Jaya farmer groups are listed in Table 1.

**Table 1.** Evaluation of Breeding Owl Farmers Group Harapan Jaya.

No. Respondent of farmer	Rat Attack (%)	Before install		Rat Attack (%)	After installed	
		Loss Result (Rp/Ha)	Rice Production (ton/Ha)		Loss Result (Rp/Ha)	Rice Production (ton/Ha)
1	10	2.400.000	6	1	300.000	7
2	5	1.250.000	6	1	346.000	7,2
3	20	5.000.000	6	5	340.000	7,2
4	5	1.800.000	8	0	0	8
5	5	1.250.000	6	1	350.000	8
6	5	1.470.000	7	2	704.000	8
7	5	1.300.000	6	1	360.000	7,2
8	5	1.260.000	6	1	346.000	7,2
9	5	1.540.000	7	0	0	8
10	5	1.260.000	6	1	330.000	7,5
Amount	70	18.530.000	64	13	2.730.000	75,3
Average	7	1.853.000	6,4	1,3	273.000	7,53

Table 1 shows that before being installed additional 4 gupon owl, rat attacks on average by 7% with total losses of Rp 1.853.00 / ha. After additional 4 gupon installed, rat attacks decreased to 1.3% with total losses of Rp 273,000 / ha. Meanwhile, rice production increased by an average of 6.4 tonnes / ha to 7.53 t / ha. This is due to the additional 4 gupon to farmer group

Harapan Jaya owl population increases, so the rat attacks decreased. Rice crop farmer groups Harapan Jaya in the dry season Th 2016 is 26.51 Ha.

The results of the evaluation of breeding owls against attacks and loss rat in Sri Rejeki farmer groups are presented in Table 2.

**Table 2.** Evaluation of Breeding Owl Sri Rejeki Farmer Group.

No. Respondent of farmer	Rat Attack (%)	Before install		Rat Attack (%)	After installed	
		Loss Result (Rp/Ha)	Rice Production (ton/Ha)		Loss Result (Rp/Ha)	Rice Production (ton/Ha)
1	10	2.860.000	7	0	0	8
2	3,5	910.000	6,5	1	374.000	8,5
3	3,5	910.000	6,5	0,1	35.200	8,5
4	10	2.600.000	6,5	0	0	8
5	10	2.980.000	7,4	0	0	7,8
6	0,1	26.400	6,6	0	0	6,8
7	0,1	27.200	6,8	0	0	7,2
8	3,5	910.000	6,5	0,1	374.000	8,8
9	10	1.510.000	5	0	0	7,2
10	3,5	910.000	6,5	0	0	8,5
Amount	54,2	13.643.000	65,30	1,2	783.200	76
Average	5,42	1.364.360	6,53	0,12	78.320	7,6

Table 2 show that before being installed additional 4 gupon owl, rat attacks average of 5.42% with total losses amounting to USD 1.36436 million / ha. After additional 4 gupon installed, rat attacks decreased to 0.12% with total losses of Rp 78 320 / ha. While the average production of rice increased from 6.53 tonnes / ha to 7.96 t / ha.

This is due to the additional 4 gupon in Sri Rejeki farmer groups, the population of owls in the field is increasing, decreasing rat attacks. Rice crop farmer groups Sri Rejeki in the dry season Th.2016 is 24 ha.

### CONCLUSION

1. In Wunut Village and Village of Ngarjo Mojoanyar subdistrict of Mojokerto district has additional installed respectively 4 cage of owl and 8 owl seat.
2. As of mid-November 2016 an additional 8 new cage of owl has been occupied by owls.
3. Attacks rat has declined from an average of 6.21% to 0.71% and rice production increased from 6.46 tonnes / ha to 7.75 t / ha.

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