

RODENT MENACE AND ITS MANAGEMENT IN DIGLIPUR, NORTH ANDAMAN - A SUCCESS STORY

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INTRODUCTION

Andaman and Nicobar islands constitute a chain of 572 Islands stretching from North to South the in Bay of Bengal, midway between peninsular India and Myanmar. The islands are distanced from the mainland by 1200 km, falling within longitude 93°- 94° East and the latitude of 6°- 17° North. Rice is the staple food crop grown in an area of around 8390 ha from Diglipur in north and Campell Bay in the south. The crop is primarily raised during the *kharif* season from the month of July to October except C14-8 which is a long duration, local variety and is grown for eight months from June to January. Rice grain production in the islands is about 24000 tonnes which is only about one third of the actual consumer requirement. Insect pests and diseases largely affect the crop yield, however in the recent years rodents have assumed a pest status on par with the aforesaid factors.

Rodent menace in Islands

Rodents damage the rice crop at all the stages of its growth. Initially, they cut/uproot newly transplanted seedlings. A diagonal cut (45° angle) on the matured tillers about 5-10 cm above the water level of fully grown crop is a typical symptom of rat damage. An extensive survey on rodent infestation in rice fields was made during *kharif* 2012 and 2013 in seven villages of North Andamans. It was observed that the milking and grain filling stages of the crop were highly vulnerable to rodent attack with a rodent infestation levels ranging from 10.44 to 38.3 per cent. The rice growers informed that they were facing serious rodent menace in the past few years after the infamous tsunami which hit the islands in December 2004. They suspected that the “big sized rats” (Bandicoot

rats) might have gained entry into the islands along with the grain and food commodities shipped from main land. To know the major rodent species infesting rice fields, mechanical traps were set in severely damaged fields and the rats collected were sent to ZSI, Kolkata for species identification. The report from ZSI confirmed that most of the specimens were lesser bandicoot rat, *Bandicota bengalensis*, the species which was *hither to* unreported in the Andaman Islands, so far.

Three villages with very severe rodent menace in the N. Andamans, *viz.*, Madhupur, R.K. gram and Subash Gram were selected for field experiments on rodent management in rice using zinc phosphide (2%) bait during panicle initiation and milky grain stage. Live burrows were located and the toxicant baits were placed deep inside the live burrows.

Method of treatment

When using zinc phosphide as toxicant for rodent control, pre-baiting was done before actually using the poison-bait. Initially for two days, non-poisoned food material was kept in the live burrows to attract and acclimatize the rats towards the new food *i.e.*, pre-bait. The zinc phosphide baits were prepared in broken rice smeared with coconut oil and poison bait in paper packets @ 10g/ burrow was applied in the live burrows after 2-days of pre baiting. For preparing one kg of poison bait, 960 g broken rice was mixed with 20 g edible oil and 20 g of zinc phosphide. Observations were recorded one week after poison baiting and subsequently infestation levels were observed throughout the crop growth period.

Success and Impact of technology demonstration

The rodent control success was calculated using the following formula.

$$C-T/C \times 100$$

C = No of live burrows in before treatment

T = No of live burrows in after treatment

Results

The rate of rodent infestation was quite varied in the three experimental fields. Subhash Gram had severe infestation of 68 burrows/ha followed with a medium infestation in RK Gram (22 burrows /ha) and least in Madhupur (10 burrows/ha). The results of zinc phosphide treatment as presented in Table 1 revealed that the rodenticidal baiting was highly efficient in reducing

rodent damage when compared to untreated control in all the field trials. The rodent control success ranged between 77.27- 87.5%. As part of awareness creation activity, series of trainings and field demonstrations on rodent management were also conducted in several villages in collaboration with our Out Reach Centre (ORC), CIARI, Diglipur. Farmers were educated on techniques of bait preparation, its application and the safety precautions in handling rodenticides, particularly to avoid accidental poisonings and secondary hazards.

Mr Kamal, a resident farmer of Subash Gram village who adopted the technology informed that he could get 8 bags (1 bag = 40 kg grains) of paddy in one biga (1 biga = 0.13 ha) instead six bags from last few years which were approximately 80 kg more than the usual yield when the field was plundered by rodents. The farmer was cultivating both short and long duration varieties.

Table 1. Rodent Control Success in Rice field in Diglipur, North Andamans

Particulars	Name of the Villages		
	Subash Gram	R.K. Gram	Madhupur
Total no of fields treated	2	1	1
No of live burrows/ ha before treatment	64	22	10
No of live burrows/ ha after treatment	8	5	2
Rodent Control Success (%)	87.5	77.27	80



Rodent infestation – Different symptoms in paddy field

Interestingly, the long duration crop C14-8 (8 months from Jun-Jul to Jan-Feb) was also protected from rodents though zinc phosphide was applied only in the field where the short duration variety Jaya was grown. The farmer was quite enthusiastic in disseminating the technology to his neighbors and friends. As a result of CIARI's intervention, now farmers from other villages have also started using zinc phosphide baiting for control of rodents in rice fields and many are approaching ORC, CIARI, Diglipur enquiring on the availability of quality rodenticide. Also, few shops have started selling zinc phosphide in 5 and 10

gram sachets. The package of practices has also been given to the Agricultural Department, Andaman and Nicobar Administration to organize rodent control campaigns in many other islands to combat the problem of rodents.

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