

## AUTOMATIC TRAPS FOR RODENTS CONTROLLING

TIMCHENKO L.

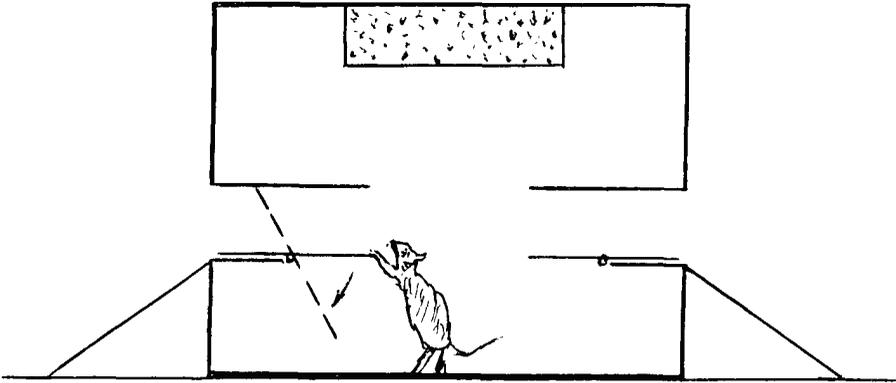
Far East Forestry Research Institute

In the Soviet Far East as well as in other regions of the country rats occur everywhere in the farms, vegetables storehouses and other objects where they have got food enough, refuge and protection from predators. The problem is especially serious in pigstys and poultry farms.

The measures of rats controlling in such places are limited for poisonous baits are dangerous for animals and birds. But they are ineffective for rats because zoocides are put on food products which are abundant at the farms and storehouses. Moreover nature protective authorities set still stronger limitations for zoocides application.

In this connection mechanical method of rats controlling is worthy of attention because it provides automatic rats trapping. It's an ecologic clean rodents controlling method, the traps can be used on those sites where chemical and biological preparations use is prohibited. Small disposable bait dishes are produced commercially in this country. They can be used in dwelling houses but at industrial units they are not economically profitable. Other traps are not available in the USSR.

Many traps construction analysis revealed their technical short-comings and impossibility of their use in practice. The disadvantage of many other continuous action traps construction is continuously cocked guards at the entrance hole which frightens the rats away. Longterm practice with traps construction showed that it is much more complicated to catch rats than any other rodents and especially in natural environment (field mice etc.). That's why traps with free open entrance are necessary not permitting the rats to get out. The trap with such an entrance was developed and tested (author's certificate number is 1510812, 1989). One of the traps variants was used for rats catching. It consists of a rectangular body with two entrances of special construction on opposite walls (figure 1).

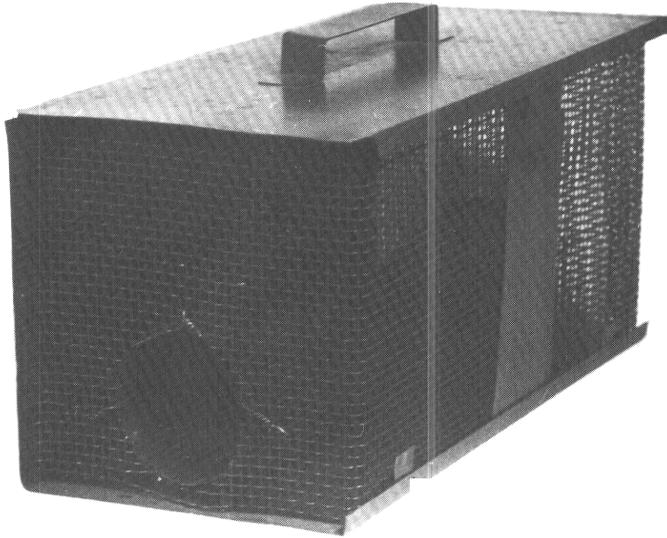


**Figure 1** : A rats trap with an open hole

From the outside they are rectangular tubes, the floor is inclined with the center of gravity displaced. Inside the trap the attractant basin is provided. Attracted by the smell rats go inside through the entrance and cannot go out. The specific feature of the hole is the fact that it is raised above the floor to the length of a rat body. Trying to get out a rodent reaches the entrance floor with its forelegs and turns it to almost vertical position and closed the exit. The rodent legs slide down on the smooth floor surface for center of gravity displaced. Inside the trap the attractant basin is provided. Attracted by the smell rats go inside through the entrance and cannot go out. The specific feature of the hole is the fact that it is raised above the floor to the length of a rat body. Trying to get out a rodent reaches the entrance floor with its forelegs and turns it to almost vertical position and closed the exit. The rodent legs slide down on the smooth floor surface for when it is in vertical position the floor does not reach the trap bottom. The floor takes its original position and the hole is again opened.

This trap is intended for inside use but when necessary it can be used in field. A shortcoming of the trap is that its hole is raised in average to 20 cm. And to enable a rat getting inside it is necessary to provide a sloping ladder or to place the trap amidst things (sacks, boxes).

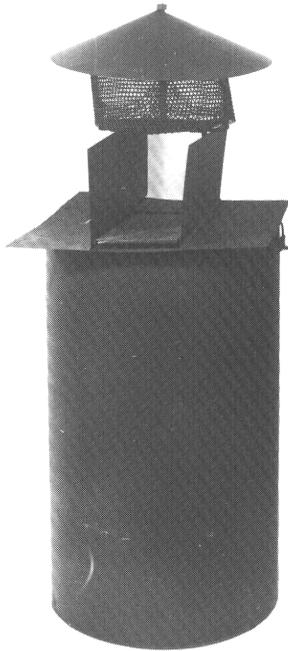
To eliminate this shortcoming a new trap was developed. It has a hole on the floor level (figure 2). The figure 2 shows that trap's body is of rectangular shape and its three sides are made of metal net. Entrance body round in shape is also of net and 24 sharp needles 12 cm long and 1,6 mm in diameter are provided inside.



**Figure 2 :** A needled trap

As in the first case holes are provided on the opposite walls. The cages seem open and the rats do not get frightened. Inside the cage an attractant basin is placed. Attracted with the smell the rats go inside. The needles tilt to the sides and after the rodent passes the needles return to the original position. When the rats try to get out the needles stick their faces. The entrance hole is 10 cm in diameter and the exit is ) cm. The entrance body length is some centimeters more than needles length. This construction type was found after a series of tests and only in this case the rats couldn't get out of the trap.

It is known that in spring some rats leave the buildings and inhabit various refuges in the open. In autumn they come back. Accordingly traps for catching rats outside the buildings are necessary. Such a trap was developed, it consists of three main blocks (figure 3) : a round body with bottom, a cover with two sides making a corridor which floor turns around an axis to 60° and above there is a basin with attractant.



**Figure 3** : A stationary rats trap

The traps were tested from May until October in 1989 at a pig farm. The farm includes 32 buildings with the total area 105326 sq.m.

In spite of treating the buildings with poisonous baits rats density was high. Especially pigsties with young pigs were affected. The rats dwelled in silicate cotton lining on pipes, in ceiling overlappings, they made nests in foamlex used for insulation on plates, in forrage distributing machinery and so on.

The traps were tested just in those houses. Rat traps with opened holes were placed amidst sacks with dry milk used for sucking-pigs feeding and also near the forrage distributing machinery. The traps with needled holes were placed on the floor in production premises. Traps for outside usage were deepened in the ground between buildings. They were covered with ruberoid to protect the traps from thrash and above a hay layer 1 m thick and again ruberoid to protect hay from rain. Thus artificial refuge for rats appeared.

Various attractants were tested : soybeans fried in sunflower oil, pig's fat salted and smoked, fish, tincture of valerian and anise and a number of other products which were inferior to the mentioned above.

The tests proved that the traps were suitable for rats controlling. Holes and ladders parameters were specified as well as bodies sizes and other constructive features. Revealed constructive shortcomings were eliminated.

Especially effective appeared to be deepened into the ground traps in artificial refuges. The layer of rats dead bodies in them was up to 20 cm high with the trap body diameter of 30 cm. Moisture penetrating into the cages made it

impossible to assess accurately the number of the rodents caught. Out of traps tested inside the buildings the most promising appeared to be the traps with opened holes. Three - six rats were found during once a week check-ups. Traps with needled holes appeared as effective. The baits were renewed every 15 - 20 days to increase traps effectiveness. It was necessary also because high humidity in the buildings caused baits decaying.

Cannibalism of the rats caught into the traps was never noticed over the whole examination period. The rodents usually died in 2 -3 days after getting into a trap. The dead bodies were regularly taken from the traps and burned. The needled traps were tested in Khabarovsk antiplague station and the results were positive.

After traps testing drafts were prepared (they are available to any organizations for producing traps) and commercial series of all three varieties all together 400 pieces were produced and used in Nekrasov pigsty.

The traps are used in the following way : inside the building 2 first types are suggested. One trap is placed on the area of 500 sq.m. These figures are tentative and they depend on rats density. Traps with open holes are recommended for food and other products and materials storehouses attracting rats, they can also be placed amidst machinery and tools for forage preparing and distributing. The traps are placed so that the rats can enter the hole unimpeded. When traps are placed on the floor or other plane surface ladders should be attached enabling rats to go into the hole. Needled traps can be used in any place where the rats live.

Traps for outside usage are placed along the buildings in artificial refuges at the distance 25 - 30 m one from another. When they are deepened into the ground attention should be paid to provide smooth way to a cage cover which is 1 - 2 cm higher than the ground level. The artificial refuge above the trap is absolutely necessary, it is made of dry hay or rags. This traps type can be used inside if the floor is earthen.

The effectiveness of rats controlling is seriously dependent on bait attractiveness and rats density, the bait should be selected very carefully.

The traps should be examined periodically for regulating catching mechanism and for bait renewal. Outside traps are examined once a year preferably in May. With the help of the mentioned traps rats density decreased to minimum level.

# LES PIEGES AUTOMATIQUES DANS LA LUTTE CONTRE LES RONGEURS

L.I. TIMCHENKO

Far East Forestry Research Institute  
Khabarovsk 20,  
Volochnaevskaya str.71, USSR

## Résumé

On a conçu trois pièges à rats automatiques. Le premier (URSS N 1510812) consiste en une cage possédant des tubes rectangulaires béants se faisant face sur les cotés. A l'intérieur de la cage se trouve un récipient contenant l'appât. Les rats, attirés par l'odeur, pénètrent dans la cage d'où ils ne peuvent plus sortir. La taille des orifices est égale à celle du corps du rongeur. L'orifice le plus bas est prolongé par une plate-forme pivotante située au dessus du plancher de la cage, dont le centre de gravité est déplacé et qui bascule sous le poids des pattes arrières de l'animal lorsque le rat essaie d'en sortir, bloquant ainsi la sortie. Les pattes glissent vers le bas et la plate-forme revient à sa position initiale. Le second piège est constitué d'une boîte munie d'un récipient contenant un produit attractif, tous les deux en treillis métallique. Sa forme est cylindrique et contient des pointes de 1,5 mm d'épaisseur et de 120 de long qui s'écartent lorsque le rat pénètre dans le piège, puis se referment lorsqu'il essaie d'en sortir. Le troisième piège a été conçu pour lutter contre les rats à l'extérieur des entrepôts. Il possède une structure ronde d'un diamètre de 300 mm et d'une hauteur de 500 mm. Une plate-forme tournant autour d'un axe occupe le centre du couvercle. Au dessus du couvercle se trouve un récipient contenant l'appât. Le piège est creux jusqu'au couvercle et protégé avec un matériau spécial sur lequel est placé du foin recouvert d'un film imperméable. Les rats s'établissent dans le foin et se déplacent le long du couloir au plancher glissant jusqu'à ce qu'ils tombent dans les pièges.

Une centaine de pièges ont été construits et utilisés pour la capture des rats dans les entrepôts de Khabarovsk et dans les fermes à bétail des environs.