

RAT CONTROL IN SENSITIVE WILDLIFE ENVIRONMENTS

Sean Baker

National Pest Control, Dubai, UAE

seanbaker@natpest.com

In Imperial Chinese culture, the rat is the first of the twelve animals of the Chinese zodiac, while in Indian tradition rats are recognized as the vehicle of Lord Ganesh and a rat's statue is always found in a temple of Ganesh. In most Western cultures, however, the rat is almost always associated as a pest or vermin.

The two most common rat species within the Middle East are the brown rat (*Rattus norvegicus*) and the black rat (*Rattus rattus*) which was responsible for the Black Plague in Europe during the Middle Ages. As a species, these animals adapt and reproduce very quickly when adequate resources are available. Within zoological collections they are particularly good at utilizing the water, shelter and food that is always available. The control of these pests is of critical importance due to their ability to act as vectors and reservoirs of disease that can affect both the animals and people (zoonosis). Health issues aside, rats can cause huge economic damage to facilities through soiling of foods, damage to property, risk of fire through eating electric cables and aesthetic/visual affects within displays, to name but a few.

Any control of rats, however, needs to be done through an Integrated Pest Management (IPM) system. Within zoological collections this is particularly important to avoid any secondary poisoning or nontarget concerns. Although many organisations rely on in-house control, it is always better to utilise the services of reputable and proven professional pest control companies. National Pest Control (NPC), Dubai was requested to design an IPM for a multi species animal collection which was having severe rat infestation problems throughout the whole of their facility.

Having carried out a thorough survey of the property they found both rat species (*R. rattus* and *R. norvegicus*) nesting and active in and around approximately 90% of the animal enclosures examined as well as the main feed stores, workshops and associated facilities. It was conservatively estimated, based on the number of burrows, nests and other activities that the infestation was severe and probably in the hundreds within the treatment area. The high abundance was attributed to free availability of food sources, refuge locations directly in and around the enclosures and easy access into the buildings. It was also found that there were previous historic attempts at control, using different trapping techniques. These were successful in trapping high numbers in specific areas but were ultimately unsuccessful as it allowed the re-colonisation of the areas by rats from neighbouring enclosures which were not controlled.



Fig1. While biological control should be encouraged, the correct poison is imperative to avoid secondary non-target poisoning.



Fig2. Rat damaged electric wire (Dinesh, NPC)

Based on these findings, a detailed IPM was designed and forwarded to the client. This was based on four main themes. Firstly, rodent proofing of the enclosures. Secondly, eliminate available refuges, which meant removing stored equipment, timber and plants being used by the rats for nesting and shelter. Thirdly, food availability was reduced or removed by making alterations to the way some animals were fed and housed. Fourthly, destroy the rats by a mass simultaneous intensive treatment program to all areas over a 6 week period. This included the use of hundreds of rat traps as well as poison which was placed inside fixed tamper proof rat bait stations.

As there was a genuine concern of secondary and nontarget poisoning with standard rodent poisons such as brodifacoum, special arrangements were made to import the rodenticide known as Fastrac from Bell Laboratories. The active ingredient of Fastrac (0.01% Bromethalin) has been designed to eliminate the risk of accidental non target secondary poisoning while at the same time providing high levels of palatability and effective control to rats.

Following some revisions to the treatment protocol over the 6 weeks of intensive treatment, it was estimated that the program had an overall 95% control level throughout the facility. As part of the IPM it is essential that vigilance is maintained and control through trap maintenance is continued. Technical evaluation is also regularly carried out by the NPC technicians in order to determine areas of concern and provide remedial action plans and fine tune treatment regimes as required.

National Pest Control is a leading public health pest control service company based in Dubai, United Arab Emirates. It's a member of the British Pest Control Association, National Pest Management Association USA, is ISO 9001 200, and also represents some of the world's top pest control industry manufactures. For further information you can contact Mr. Sean Baker: seanbaker@natpest.com.