

Tackling rats head on: Lots to gain and little to lose... as long as it's done professionally and responsibly

[1,350 words]

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Seventy four per cent of gamekeepers, farmers and pest controllers believe climate change will lead to an increase in the UK rat population, according to a survey by the Campaign for Responsible Rodenticide Use (CRRU) at the 2008 Game Fair.¹ Based on evidence they see in their work currently, 61% of participants reckon the rat population is already rising, while 30% say it is static and 9% believe it to be falling.

The significance of these expectations to the gamekeeping profession should not be underestimated. In addition to being significant predators of game bird eggs, rats carry fleas, mites and multiple disease organisms including *Cryptosporidium*, *Campylobacter*, *Listeria*, *Toxoplasma*, *Salmonella* and *Leptospira*.

Indeed, the Health Protection Agency reports 76 confirmed cases of leptospirosis in humans during the last year for which data is available (2006).² Not all cases could be linked to a potential cause, but among those where this was possible, one-in-four were farmers. Among the 76 cases, two were fatal.

It is also estimated that half of all farm fires are started by rat damage, and rats eat an estimated 210 tonnes of animal feed and cereals a day in the UK, and contaminate what they don't eat with faeces and urine.

No less an authority than The Sun newspaper reckons that Britain is "plagued by 80m rats".³ Rather more soberly, in 2004 the International Pest Control journal quoting Roger Quay of the Central Science Laboratory (CSL) estimated the UK rat population to be 10.5 million.⁴ As recently as mid-March this year, the Yorkshire coastal village of Flamborough was re-named "Ratville UK" by the Daily Mail as a result of becoming "overrun with rodents".⁵ On top of all these factors, of course, farmers are also required to control rats (and other vermin) for compliance with farm assurance schemes.

However, gamekeepers' imperatives to control rats are matched by the need to do so responsibly. Otherwise, indiscriminate or ill-disciplined use of rodenticides poses all manner of threats in the rural community.⁶ Children, pets and non-target animals are all at risk of poisoning from poorly positioned baits. Predatory birds including red kites, barn owls and kestrels are at risk of 'secondary contamination' if they eat the carcasses of rats killed by rodenticide and not collected and disposed of promptly.

Moreover, government surveillance of pesticide use and wildlife casualties means that perpetrators of irresponsible rodenticide use face identification and prosecution.⁷

[sub-heading] **Know your enemy**

Rats are wonderfully adapted to survive and thrive. They live in large hierarchical colonies and range over a familiar area (their 'home range'), normally no larger than they need to find sufficient food, water and nesting places. If a large proportion of a rat colony is killed, it is thought that the remainder will increase reproductive rate and thereby restore the old population level.⁸ So a control programme should be designed and implemented for complete elimination; half measures are a waste of time and money.

Rats have excellent senses of smell, taste, touch and hearing. Though their sight is weak, this is made up for by the ability to remember a complex sequence of muscle movements, called kinaesthesia. They move around their home range relying on this ability and may, for example, continue to move around the location of objects that have been taken away. Connected with this, they are also cautious about new objects placed in their home range, which explains why new baiting points may appear to be ignored by rats for several days initially.

Usually, rat infestations have an existing and abundant food supply and they will not switch quickly from reliable and trusted food to a new one such as rodenticide bait. When a new food source becomes available alongside an already plentiful one, typical behaviour is for individuals to sample small quantities at first. If there is an adverse reaction, they will not take that food again (called 'bait shyness') and may not return to the place where it was eaten. So before introducing bait, it is advisable to eliminate other food sources and render the target rat colony hungry and therefore more likely to take bait in lethal quantities quickly.

[sub-heading] **Controlling rats**

An effective rat control initiative has three parts: (i) Baiting and killing to eliminate target rat colonies; (ii) rodent proofing sensitive areas for prevent access; and (iii) cleaning and tidying to deny food and shelter and make the site as unsuitable as possible for a new colony.

To ensure that you comply with what is recognised as responsible (and effective) practice, follow the seven point CRRU code:

[1] A planned approach. Study the location of the infestation carefully and identify the colony's home range. However, don't tidy up or move things yet because disturbance may deter rats from taking bait or even displace them to another location. Draw a plan of the target area.

[2] Use enough baiting points at locations all over the target home range. Mark each location on the site plan. Remember, half measures are pointless. Using enough baiting points from the outset will minimise the time taken for control to be achieved and also reduce exposure time for non-target species.

[3] Record quantity of bait at each location, then note signs of rat activity at each point as the treatment period progresses. Follow the rodenticide label instructions accurately.

[4] Collect and dispose of rodent bodies regularly both during and after the treatment period. This is one of the most important points on the CRRU code. The carcasses may contain rodenticide and, if eaten by predators or scavengers, could be a source of wildlife exposure. Dead rats may be found for several days after eating bait and they may die 100 metres or more away from the baited site. Dispose of rodent bodies as recommended on the product label.

[5] Never allow bait to be exposed to non-target species. Where possible, use materials already in the target home range (e.g. concrete blocks, slates, bricks, corrugated sheets, etc) to protect bait from rain, dust and access by non-target species. Tamper-resistant bait stations are available and offer the highest level of protection of bait from non-target animals and human contact. Use these where covers made from other materials may not be secure enough.

[6] Inspect every bait location regularly, as recommended on the product label, and replenish accordingly. Keep a record of each inspection, what you found and any action taken; this is important if you are subsequently required to demonstrate good practice. Also be alert for signs of disturbance by non-target animals.

[7] Remove all bait from every location at the end of the treatment period and make a record on the site plan that you have done so.

As soon as the treatment period is over, it is essential to make sensitive areas rodent-proof, and generally clean and tidy the entire site to minimise its suitability to re-colonisation. If this isn't done, a new colony will be established and you'll be back to square one.

Hopefully, the purpose of the Campaign for Responsible Rodenticide Use (CRRU) is self-explanatory. For gamekeepers, there is an absolute need to kill rats. But there is a correspondingly absolute need to do so with minimal impact on wildlife and the environment. These two imperatives can be achieved without compromising one or the other, as long as good practice is observed. Good practice requires knowledge, skill and application.

CRRU is a non-profit organisation, established in 2005, comprising a consortium of six companies: Sorex, Rentokil Initial, PelGar International, Novartis Animal Health, Killgerm Chemicals and Bell Laboratories. It also has links with relevant organisations such as Natural England, the Health and Safety Executive, the Centre for Ecology and Hydrology, Huddersfield University, the Pesticides Safety Directorate, and the Pesticides Forum.

For students on game, wildlife and countryside management courses, a five-module training programme on responsible rodent control has been developed by CRRU and Sparsholt College, Hampshire, and made available to all members of the Land Based Colleges National Consortium. Based on this, an industry version designed for working farmers, farm managers, gamekeepers and countryside managers is under development.

Further information is available from the CRRU website at www.thinkwildlife.org.uk

References

- ¹ CRRU data on file, July 2008. Face-to-face survey of Game Fair visitors, Blenheim, Oxfordshire.
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- ³ Tim Spanton, 4th February 2008. Britain plagued by 80m rats. The Sun. <http://www.thesun.co.uk/sol/homepage/news/article757835.ece> retrieved 12th March 2009.
- ⁴ International Pest Control, Jul-Aug 2004, vol 46, p202-203.
- ⁵ Paul Harris, 11th March 2009. Ratville UK. Fear and loathing rule in a corner of Yorkshire overrun with rodents Daily Mail.
- ⁶ HSE (1999). Agricultural Information Sheet No. 31 Safe Use of Rodenticides on Farms and Holdings Available from HSE Books. Bootle, Merseyside. Health and Safety Executive: 4.
- ⁷ Campaign Against Illegal Poisoning of Wildlife, 20th March 2009. <http://www.caip-uk.info/>. Information also available at <http://www.pesticides.gov.uk/environment.asp?id=504>
- ⁸ Wikipedia, viewed 12th March 2009. Brown Rat: Reproduction and life cycle. http://en.wikipedia.org/wiki/Brown_Rat.