



Future of rodenticide use depends on ALL farmers, gamekeepers and pest controllers

Collectively, UK farmers, gamekeepers, pest controllers and rodenticide suppliers share a troublesome Achilles heel that is not going to heal on its own. The problem is leakage of rodenticide poisons into wildlife. Routine monitoring of barn owls by the UK Rodenticide Stewardship Regime from 2016 to 2021 finds “stubbornly static” rodenticide presence in nearly 90% of barn owls.

Particularly troubling is that two-thirds of the barn owls sampled each year are selected intentionally as juveniles, defined as less than two years of age. This means these birds acquired rodenticide residues with stewardship rules in place. By the way, almost all barn owls analysed have died by collision with vehicles or natural causes rather than a fatal level of rodenticide.

Although not monitored so routinely, many other predator, scavenger and prey species are also known to carry rodenticide contamination. These include red kites, buzzards and kestrels; small mammals such as voles and field mice; together, it is thought, with slugs, snails and the animals for which these are a food source, including hedgehogs and foxes.

Clearly, this leakage cannot be allowed to go on and stewardship’s HSE-led Government Oversight Group is conducting a formal review of the regime’s first five-years. Its ultimate sanction would be an outright ban on rodenticide use, regardless of operator training and certification, except perhaps by rigorously qualified pest control contractors.

But things needn’t come to this if shoddy practice in rodenticide use by some farmers, gamekeepers, and pest controllers too, is eliminated.

That’s what the information here is about, based on the recently updated Code of Best Practice in rodent control published by the Campaign for Responsible Rodenticide Use UK.

Something important that all rodenticide users should know is that the Biocidal Products Regulation GB governing rodenticides requires that “biocidal products shall be used in compliance with the terms and conditions of authorisation”. These are summarised on product labels, thereby creating a legal obligation on all users to follow instructions for use exactly.

Of course, you can study the CRRU Code of Best Practice’s 30+ pages of information and guidance,

available to download from thinkwildlife.org/download/crru-uk-code-of-best-practice-2021/?wpdmdl=18095. Clearly, that is where to go for more detail than space allows here.

Meanwhile, in bite-size chunks, here is what’s covered in this newsletter:

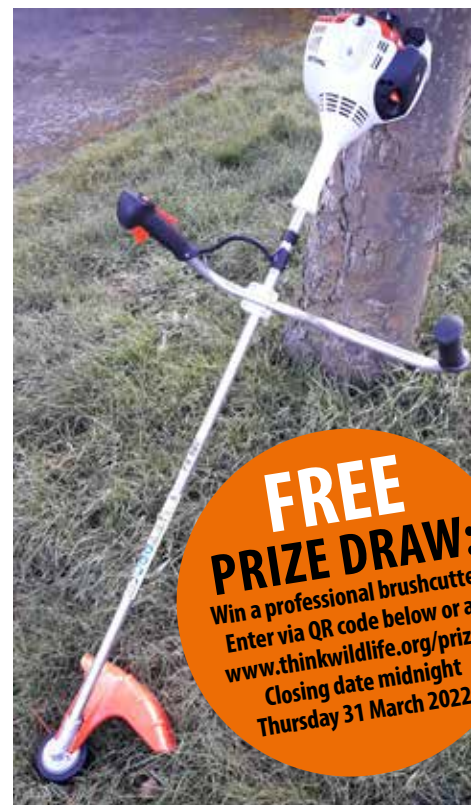
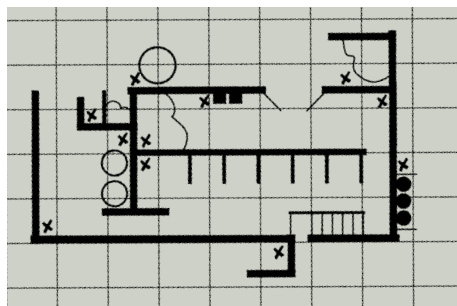
- 1) **First things first – a clear plan for control and staying legal.**
- 2) **Risk hierarchy – simplest and lowest risk first.**
- 3) **Non-poison – much to gain, few disadvantages.**
- 4) **Rodenticides – which to use for best and cost-effective results?**
- 5) **Bad landlord – repel or exclude unwanted visitors.**
- 6) **Checklist for max impact, max cost-effectiveness, no unintended consequences.**

PART 1: FIRST THINGS FIRST – A CLEAR PLAN FOR CONTROL AND STAYING LEGAL

Perhaps the most important equipment you need is also the cheapest... a pencil and paper.

Start with a printed layout of the area you’re covering, or sketch one for yourself. Mark on it a few critical things:

- All the places you can recall where control of rats or mice has been required in the past.
- Anywhere around the site where rats could be living. Too often, this will include scrap machinery, old straw stacks, rotting timber, a derelict caravan and various ‘treasure’ that was once considered too useful or valuable to throw away or burn. Mouse nests will be inside buildings.
- Current location of all bait boxes and DIY protected bait locations.
- The location of potential food supplies for rats or mice, including frequent spillage points for animal feeds or grain.



FREE PRIZE DRAW:
Win a professional brushcutter.
Enter via QR code below or at
www.thinkwildlife.org/prize.
Closing date midnight
Thursday 31 March 2022.

Even if you know there’s a rodent problem to deal with, it’s worth spending some time getting as full a picture as possible of its extent. Search the area for droppings, signs of rodent damage and rat burrows. Check any traps for dead victims and non-rodenticide monitoring bait for signs of recent visits.

On your site plan/sketch, write down what you found and where, then give yourself a pat on the back for doing the single most important part of a control programme. Along with this master plan, you are also under a legal obligation to do an environmental risk assessment (ERA)

This is made much simpler than you might think using a standard format drawn up by CRRU and available to download* as a writeable PDF file that you can print and save, along with an advisory module** that you can follow; (*links on p2).

Scan this to enter the prize draw or visit: thinkwildlife.org/prize.
Closing date: Midnight, Thu 31 March 2022



It is also good evidence for farm assurance or professional pest control register purposes.

*thinkwildlife.org/download/environmental-risk-assessment-form/?wpdmml=17667

**thinkwildlife.org/download/environmental-risk-assessments-crru-cpd-resource-july-2018/?wpdmml=17608

Finally a word about teamwork, particularly for farmers: Please don't take this on solo. Discuss it with your workforce and family members and delegate some of what needs to be done among them. Whether covering farms, shoots or other business premises, successful rodent control is a forever-job ideally involving several people.

PART 2: RISK HIERARCHY – SIMPLEST AND LOWEST RISK FIRST

Of all the possible things you can do to control pest rodents, second generation anticoagulant rodenticides (SGARs) pose the greatest risk of harming people, pets and non-target wildlife. The risk hierarchy described by the Code of Best Practice is simply a scale from zero to severe of control measures available. **And the Code's legal status means that ignoring it would be a breach of rodenticide stewardship and farm assurance conditions.**

Essentially, employing the risk hierarchy means using the least severe methods consistent with a reasonable expectation of achieving the rodent control required. At the lower end of the hierarchy, it's not exactly difficult to envisage what's on offer, long before spending good money on rodenticides.

A golden rule is that lasting control can only be achieved by minimising the rodent carrying capacity of the site. Basically, this involves denying rats or mice a place to nest, access to food and water, and entry routes into your buildings. These may seem obvious, but a survey by CRRU found only 60% of farmers, for example, recognised that rodent control is easier, lower cost and less problematic on a tidy farmstead. Arithmetically and alarmingly, this means about 40% don't get this.

Asked to rate their own site's tidiness, most awarded themselves a mediocre five, six or seven out of ten. And while eight-in-ten farmers used poison baits, lower severity control measures in the risk hierarchy such as denying access to food (58%), traps (40%), rat-proofing for buildings (31%), terriers and shooting (31% each) were much less commonplace.

Compared with the risk hierarchy, these choices are clearly upside down. Indeed, such widespread use of rodenticide as a first step rather than last resort may go some way to explaining why, several years into the UK Rodenticide Stewardship Regime,

nearly 90% of barn owls continue being found to carry rodenticide contamination. Surely at some point, the relevant authority is going to intervene with additional controls that will limit farmers' and gamekeepers' DIY options.

To recap, where feasible employ low severity non-rodenticide methods to achieve control. . . more detail in Part 3.

Only when necessary, and based on your surveillance, site plan and risk assessment, place rodenticide according to the label and manufacturer's instructions. . . more detail in Part 4.



Check rodenticide labels for new details of approved bait stations

PART 3: NON-POISON – MUCH TO GAIN, FEW DISADVANTAGES

Traps, terriers and shooting are legitimate under the Code of Best Practice as long as employed responsibly. Unless poison baits are being used simultaneously – which in most situations doesn't make much sense – all three avoid the risk of rodenticide exposure to people, pets and non-target wildlife.

In addition to being low cost, a valuable benefit can arise from the personal involvement of people working on the site, whether farm or shoot or other business premises. It creates an up to date awareness and unique insight to the scale and distribution of a site's rodent problem. Once control is achieved, it's also likely that those involved are more attuned to and attentive for early warning signs that re-invasion might be taking place.

With all three methods that follow, pre-control monitoring, a site plan, and environmental risk assessment, should all be done and will help maximise the impact.

Trapping: Whether using kill-traps or live-capture, this poses risk to non-target wildlife, so an environmental risk assessment is called for (covered in Part 1). There are three important requirements for traps: 1) Shielding to prevent access by non-targets by setting in a natural or artificial tunnel or other covered position; 2) daily checking and disposal of victims; and 3) they must not be left baited and set permanently.

Terriers: Controlling rats with dogs is legal in the UK under the Hunting Act (2004) and near-instant death makes it one of the most humane methods.

Whether using your own terriers or inviting known and trusted owners to join a clearance team, a necessary statement of the obvious is to be sure that the site has zero rodenticide presence on the day.

Shooting: The law about air rifle ownership depends on region of the UK, according to a BPCA webinar.

- "In Scotland and Northern Ireland, a licence from the region's police is required.
- "In England and Wales for over-18s, no licence is needed for airguns rated up to 12 ft-lb capacity.
- "Users have a duty of care to be trained and competent, maintain guns in good working order, and for safe use in general.
- "For self-protection, wear ricochet glasses rated mechanical strength F (be aware that a lower spec S rating offers less protection).
- "For training and practice, competition and friendships, consider joining an airgun club.
- "Make sure no shooting takes place where there may be public access, such as rights of way, and follow all necessary rules about the safe use of airguns."

For all non-poison methods, it's crucial to know beforehand how you will dispose of the resulting victims. According to the BPCA website, burial is



allowed on farms as long as it's done in a way that no water course could be contaminated.

To prevent scavengers (e.g. foxes, badgers) digging up the carcasses, burial needs to be deep enough (at least one metre) with compacted back-fill.

PART 4: RODENTICIDES – WHICH TO USE FOR BEST RESULTS AT SENSIBLE COST?

It is no longer allowed, or indeed legal, to use professional grade rodenticides without following the CRRU Code of Best Practice as summarised here. Nor is it legal to supply or purchase these products without the necessary certification to prove competence to use them.

When it comes to selecting which rodenticide to use, please do not simply choose the biggest tub at lowest cost from your supplier.

Whichever you do decide on, **PLEASE READ THE LABEL CAREFULLY AND FOLLOW ITS**

INSTRUCTIONS IN FULL, no half measures or short cuts.

For an indication of what is at stake here, the Government panel that oversees the stewardship regime has said it expects to see measurable effects on residue levels in non-target animals. To recap from Part 1 “routine monitoring in barn owls finds ‘stubbornly static’ rodenticide contamination in nearly 90% of barn owls.”

As a portent of what could happen, the survey mentioned previously found that 40% of farmers regard as ‘probable’ the hypothetical suggestion that high potency rodenticides might be restricted in future to professional pest controllers only. Another 43% rated this ‘possible’.

If barn owl surveillance sees no change, further restrictions are likely on where rodenticides can be used, and by whom. Responsibility for whether this arises is in the hands of all rodenticide users, whether farmer, gamekeeper or pest controller.

STEP 1: Is rodenticide use justified? Essentially, this depends on the results of your monitoring and an assessment using the risk hierarchy about which methods are likely to achieve the results you want. If you decide that you need to use a rodenticide, record this on your plan and give the justification for rodenticide use.

STEP 2: Which rodenticide, first or second generation anticoagulant or non-anticoagulant?

It bears repeating from above, whichever compound you choose, **PLEASE READ THE LABEL CAREFULLY AND FOLLOW ITS INSTRUCTIONS IN FULL**, no half measures or short cuts.

Does it really matter which product you use? If your site’s or client’s unwanted residents have rodenticide resistance genes then yes, it matters a lot. To find out a site’s resistance status specifically, it is possible to have tail samples from dead rodents DNA finger printed, through the CRRU monitoring programme, which is free of charge but limited capacity. How to use the CRRU testing can be found here: thinkwildlife.org/anticoagulant-resistance-project/.

For a general idea of local resistance status, look at the Rodenticide Resistance Action Committee/ Group’s UK map and follow the guidance: guide.rrac.info/resistance-maps/norway-rat/europe/united-kingdom.html.

Areas where resistance genes have been found are shaded red, and where samples have been taken and found susceptible, blue. There are large areas of the UK that are ‘status unknown’ due to the unavailability to date of tail samples. Depending on your location’s status, here are your options for rat control:

- **Resistance genes present** on your site or in surrounding district:

Choose a ‘resistance busting’ second generation anticoagulant rodenticide (SGAR) containing brodifacoum, difethialone or flocoumafen, or a non-anticoagulant (ie Groups 2, 3 or 4 in the table overleaf) depending on the type of resistance present (also see above).

Resistance genes absent from your site and in surrounding district:

Any first generation anticoagulant (FGAR), SGAR or cholecalciferol. **But if you are a farmer with pigs for example**, they are highly susceptible to warfarin (an FGAR) and their indiscriminate appetite and feeding behavior create risks of them eating dead and dying rats or even bait itself if placed badly.

When dealing with mice, whether resistant or not, use one of the three most potent SGARs – brodifacoum, difethialone or flocoumafen – or a non-anticoagulant alternative.

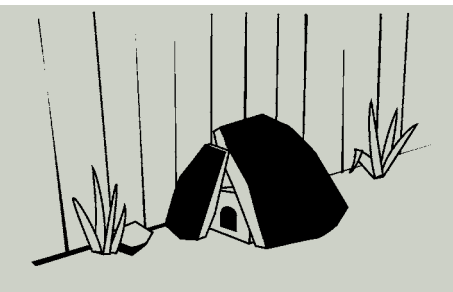
As long as you follow label instructions in full and monitor the effectiveness of your control plan, buying baits containing the first generation anticoagulants can be a sound decision. Warfarin and coumatetralyl, for example, have been in use for many decades and remain effective when used correctly where rats are still susceptible.

EASY ON-FARM OPTION

Just like other farm operations that demand specialist knowledge and skills – silaging, slurry spreading or hedge cutting, for example – contracting out your rodent control is a good option for some. For best value, do your site plan and monitor the rodent problem yourself before talking to a pest controller or three. Then get yourself or a responsible employee involved in the control programme, monitoring results, collecting dead rats or mice, and making the site less homely once the infestation has been eliminated. Same as all purchasing, the more fully you understand the problem and solution, the better deal you can drive. So please read on and equip yourself.

STEP 3: Setting out bait stations and laying bait

The default option when applying any rodenticide bait is to use purchased tamper-resistant bait boxes that are specific to the target pest i.e. rats or mice.



UNDERSTANDING THE LABEL

It is a legal requirement to use rodenticides only in areas permitted by the product authorisation, as stated on the label. If in doubt, consult the supplier before you buy.

‘Indoors’: Behind closed doors.

‘In and around buildings’ OR ‘Outdoors – around buildings’: Confusingly, some labels use one of these and some, the other. Both mean a building and the infested areas around it that need to be treated for control of rodents moving into the building from outside.

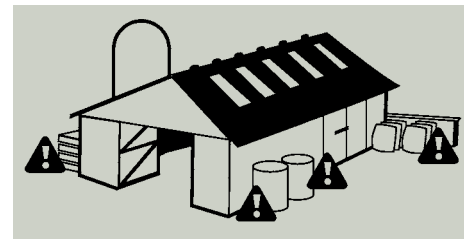
‘Open areas’: Outdoor spaces not directly associated with a building, for example: Game bird rearing pens, open farmland, hedgerows and ditches, potato/sugar beet/silage clamps, fields with pig arks.

Bait boxes must conform with new label phrases about how robust these should be. Follow product label instructions about where to place them, how many to use and how much bait to put in them.

If permitted by the label, you may construct bait stations yourself but if you do they must offer at least the same level of protection to bait inside them as those you can buy.

Other important factors

Be aware that permanent baiting is no longer allowed in the absence of an existing infestation (ie as a preventive measure) unless there is specifically a high potential for reinvasion when other methods of control have proved insufficient.



When this is the case, it should be noted clearly in your control plan. Even then, it is only permitted using a rodenticide with permanent baiting stated on the product label. This condition also applies to burrow baiting.

If considering either permanent or burrow baiting, you should refer to specific guidance on pages 13, 29 and 30 of the CRRU Code of Best Practice, and record in your control plan that you have done this and followed the guidance in full.

PART 5: BE A BAD LANDLORD – REPEL OR EXCLUDE UNWANTED VISITORS

If you have evidence of an infestation that needs controlling, the CRRU Code of Best Practice advises doing so before tidying the site. This may seem

illogical until someone points out that tidying up will disturb the pests, quite likely dispersing them more widely around the locality and so making control much more difficult.

Anecdotally, a friend tells of a site across the road taking down a poly-tunnel and levelling the plot. This prompted "a plague of rats to disperse around neighbouring properties," she reports.

The resulting infestations caused great distress and considerable expense to residents, as well as reputational damage to the culprit farmer and, by association, "bl**dy farmers!" in general, said the friend.

A serious concern for rodent control in rural locations is that a survey found only about 60% of farm owners and managers recognise the importance of a tidy farm for preventing infestations.

Clearly, this implies that four-in-ten don't see the connection. Although it's not known how this compares among gamekeepers and pest control technicians, the importance of a tidy site applies everywhere.

It is thought, for example, that rats are not inclined to cross open spaces unless desperate for food.

Perhaps this is an innate defence mechanism that protects against being taken by airborne predators. Whether that's true or not, a tidy concrete or gravel apron around buildings does give natural predators an opportunity, making rodent invasion from the surroundings less likely.

While tidying up, it's worth being aware that rats are naturally wary of new objects in their territories. So this is a good time to put down new tamper-resistant bait boxes, left empty for the time being to become weathered and for any resident rats to get used to them. If or when rodenticide use does become justified, don't make the mistake of wiping off any soiling, green algae etc from bait boxes while placing bait.

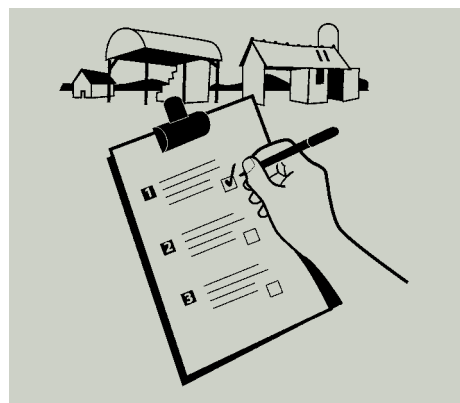
A serious concern about untidiness is that the survey mentioned earlier found half of farmers questioned only scored their own place's tidiness as a mediocre five, six or seven out of ten, while poison baits were used by 79% of them. There is no ducking the reality that these findings are incompatible with the principles of rodenticide stewardship, especially the risk hierarchy explained in Part 2.

It is impossible to completely rodent-proof some farm buildings, especially against mice. Even so,

fill gaps around pipes as they enter buildings, block access points at wall-to-roof junctions. Pay special attention to ensuring doors and windows are secure to help prevent access and minimise the need for more costly and potentially risky control operations.

Once control is achieved, ongoing post-treatment surveillance is advisable for early warnings about new immigrants that you can nip in the bud cost-effectively.

The final part (no.6) of this series is a checklist to help farmers, gamekeepers and trainee or recently qualified pest controllers achieve maximum impact rodent control at minimum cost with no unintended consequences to people, pets or wildlife. It can be downloaded from thinkwildlife.org/downloads.



RODENTICIDE RESISTANCE ACTION GROUP: CLASSIFICATION OF ACTIVE SUBSTANCES FOR RESISTANCE MANAGEMENT

Group	Sub-Group	Compounds	Recommended uses	
1	Anticoagulants	A FGAR	warfarin, coumatetralyl	For use against Norway rats when there is no resistance to anticoagulants.
	B SGAR	bromadiolone, difenacoum	For use against Norway rats when there is no resistance to anticoagulants, and against rats carrying mutations (L128Q and Y139S).	
	C SGAR	brodifacoum, difethialone, flocoumafen	For use against house mice, and all strains of resistant rats (L128Q, L120Q, Y139S, Y139C, Y139F).	
2	Calciferols	-	cholecalciferol	Recommended against house mice, and all strains of rats.
3	Narcotics	-	alphachloralose	Recommended for control of all strains of house mouse.
4	Gases	-	carbon dioxide, aluminium phosphide, hydrogen cyanide	Specific applications by trained professionals only. Species restrictions may apply.

SEE BOTTOM OF COLUMN 1 ON PAGE 3 FOR HOW TO USE THIS INFORMATION.



To keep for future reference, this newsletter and its companion checklist can be downloaded as PDF files from:

thinkwildlife.org/downloads