



Keeping rodents at bay

Whitepaper
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Understanding bait and baiting methods

Rats and mice are inevitable in poultry units, and farmers must maintain constant vigilance to prevent infestations. Rodents are particularly active at this time of year, as food sources dwindle and temperatures become cooler and they move indoors in search for food. They pose a significant threat to biosecurity as they can harbour and transmit pathogens to poultry, and subsequently to consumers of meat and eggs. But by using the right products in a well-planned programme – in the right place, at the right time – rodents can be kept at bay. This whitepaper provides useful tips and advice on running a successful baiting campaign.

Why are rodents a problem?

Infestations of rodents on a farm are obviously a problem but exactly how much of a pest are they and how do they affect the bottom line of a farm?

- Rodents can carry infections such as fowl cholera and avian flu that can be spread to poultry. Rodents can also carry zoonotic infections, such as *Leptospira* and Hantavirus, which pose a risk to the health of farm staff and other people visiting the farm.
- Research in the UK has confirmed that rodents play a major part in the maintenance of Salmonella infection on poultry farms, and in the spread of infection between poultry houses. Rodents are easily infected by Salmonella and can carry and shed high numbers of organisms into the environment, particularly in droppings. Infected rodents can rapidly re-contaminate units that have been disinfected at turnaround.
- Rodents cause damage to farm buildings and poultry houses, including damage to insulation and electrical installations, which may lead respectively to uncontrolled temperatures in broiler sheds and the risk of fire.
- Large rodent populations can eat a substantial amount of poultry feed and make an even larger amount unpalatable through urine and droppings.
- The presence of rodents also compromises the quality standards required by farm assurance schemes.

The two key rodents of concern to poultry farmer are the Brown Rat (*Rattus norvegicus*) and the House Mouse (*Mus musculus*).

Can I treat rats and mice in the same way?

As rats and mice vary considerably in their general behaviour and feeding patterns, a variety of deterrent and rodenticide baiting techniques are needed to target both rats and mice.

Feeding patterns of mice

As mice like to visit several different food sources, a number of bait points are required, and these should be moved regularly within territories to maintain their interest to mice. Bait should be kept fresh, free from dust and dampness and placed where the rodents are nesting and travelling – not just in set baiting points. This will often involve creating covered access points in walls, roof spaces, mini-pits, etc. in which to place bait and tamper-resistant bait boxes. Access points to poultry houses, such as the entrances of manure and egg conveyors, doors, drains and low-level vents, should also be baited.



Feeding patterns of rats



Rats exhibit behaviour known as ‘new object reaction’ or neophobia, which makes them suspicious of anything new introduced into their territories. They are therefore slow to explore bait boxes and trays, and to start feeding on rodenticide baits, especially when already established within poultry houses. Allow at least two to three weeks for rats to get used to feeding in bait boxes placed in their environment, before deciding on whether the method being used is working. Monitor bait consumption and rat activity regularly to assess this.

What bait should I use?

Anticoagulant rodenticides

The most effective way to control an infestation is by using a suitable poison. Most of the products currently available for use against rodents are anticoagulant based. Anticoagulants work by preventing the assimilation of vitamin K1, one of 12 ‘blood clotting factors’ within vertebrates. Once a lethal dose of poison has been eaten by the rodent, there is a three to four day lag period while the existing vitamin K1 in the body is used up, after which the blood will no longer be able to clot, resulting in haemorrhaging and death. The advantage of this delay is that rodents never associate the bait with the symptoms of poisoning that they experience, so they continue to feed on the bait without realising it is killing them.



Extreme caution needs to be taken when using rodenticides to ensure that non-target species, such as pets, livestock, birds and children, do not come in contact with the poison. Rodent baits should be secured and protected, ideally in a bait station, and removed once the issue has been resolved. Care must also be taken to avoid secondary poisoning of non-target animals – the treated area should be checked and carcasses properly disposed of. Needless to say, rodenticides and related equipment must be stored in a safe and secure location, away from other hazardous materials which could taint bait formulations, such as fuel and disinfectants.

What's the difference between multi-feed and single feed bait?

Multi-feed bait means that multiple feeds will be required before death – these normally contain difenacoum or bromadiolone. The advantage of multi-feed bait is that the risk to non-target animals is lower. However, using multi-feed bait does increase the chance of resistance build-up within the rodent. Single-feed bait is normally made with brodifacoum or difethialone and this, as the name implies, only requires one feed to cause death. These baits are usually the most effective but pose the greatest risk to non-target animals.

Types of bait

There is no such thing as a universal rodenticide that will work in every circumstance. Certain active ingredients and formulations will work better in different situations. The best bait is the one that the rodents will eat in preference to any other food source nearby. There is no harm in buying and trying two different formulations to see which one is the most readily accepted. At Interhatch, we stock a range of high quality, palatable formulations, with differing benefits to each type.

Edible baits - loose cereal baits, pellets, wax blocks and pasta bait

- Generally better accepted by rodents
- Less susceptible to mould growth, meaning they remain palatable for longer even in damp conditions
- Less risk of contamination
- Most blocks have a hole in the middle making them easy to secure

Edible gels, wax baits and pastes

- Useful for sensitive environments, such as where food is handled or stored
- Form is maintained over time which results in prolonged palatability, provided they are kept free from dust and moisture contamination

Contact foam

- Perfect for locations such as cavity walls where traditional rat baits cannot reach
- Able to be placed in areas where the rodent would partake in its natural grooming habits, making it highly effective.



A systematic and integrated approach

Effective rodent control is not just about putting down bait anywhere and hoping for the best. Following the steps below will ensure a campaign is as effective as possible:

1



Tidy up

Before baiting, clear away any existing food sources that may distract rodents from laid baits. However, do not disturb the environment too much immediately beforehand, as this disrupts the rodents' normal activities, making control more difficult.

Look for signs

Monitor rodent activity and make a site plan of where they are living and feeding, and the routes they use to travel between these areas. Look for signs of damage, such as gnawed doorways, footprints in mud or fresh droppings. Keep an eye open at all times and act sooner rather than later. It is always easier to control a small infestation than it is a plague.

2



3



Choose the right rodenticide

There are usually one or two products best suited for a particular situation. Consider what the rodents have been feeding on and try and match the appropriate bait to this. [Interhatch](#) has a filter on its website to enable users to find the correct form of rodent control.

Follow a sound baiting routine

Place bait stations in the areas of most rodent activity and inspect them regularly. A small initial infestation of rats may require 10 to 15 baiting points. Top up empty bait stations immediately and make sure enough bait is used.

Keep records of where bait has been placed and the products used. This will help track bait usage and also form part of farm assurance records. The consumption of bait should decline after 10 to 14 days. Keep bait points topped up until no more bait is taken. At the end of a campaign, empty all bait stations and dispose of soiled bait safely. Leave the stations in situ so they will be ready for the next baiting programme.

4



5



Stop new rats coming in

In winter, new rats will soon fill the gap left by the population that has been eradicated. Continue to tidy and protect food stores, seal the bottom of wooden doors with metal strips and try to minimise fresh water sources.

Remain vigilant

Monitor activity at all times and start a new campaign as soon as new rodents are seen. A female rat can produce eight young every 22 days, so a population can expand very quickly.

6





The final word

Naturally, control measures such as rodent proofing, site tidiness and hygiene, and denial of rodent access to food and water, will help to prevent rodent infestations becoming established in the first place. Regular inspections should be a matter of habit in order to identify early signs of rodent activity. It is always easier and less costly to remove a small, developing rodent infestation than an established substantial one. If you would like more information or are experiencing a particularly stubborn problem, please contact our specialist team who will be happy to advise.