



Windy Hill Sanctuary Citizen Science Series #9

In this next article in our Citizen Science series we detail the introduction of toxins into the Windy Hill Sanctuary pest management programme and the reasons why we did this.

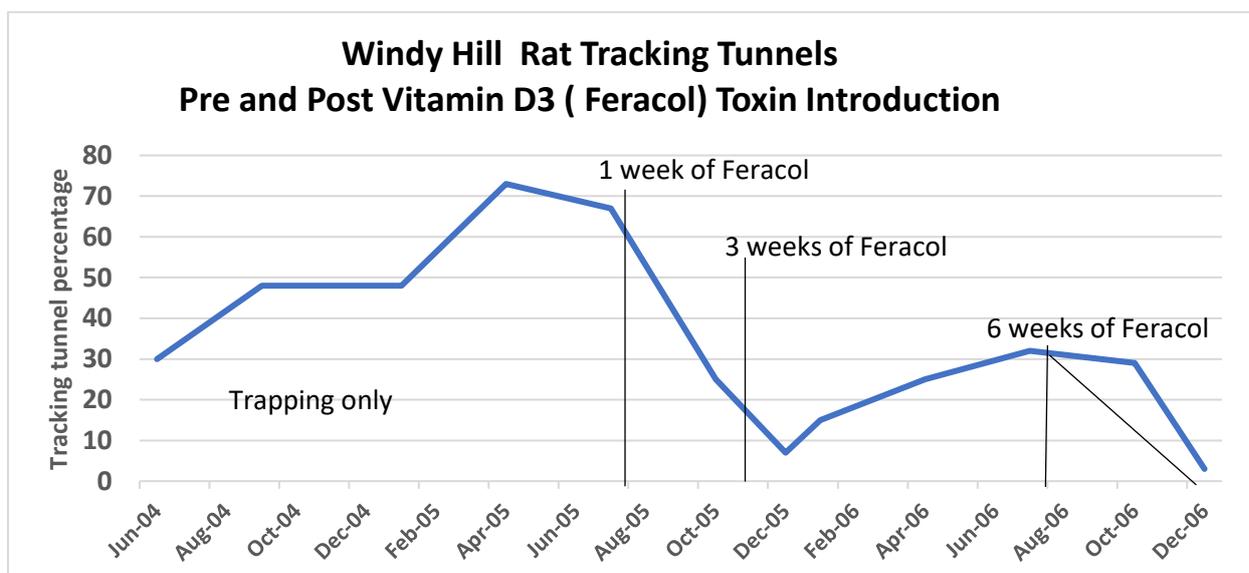
From 1999 – 2005 the Sanctuary management of rats relied solely on **trapping**. Detailed data was kept over 6 years which showed unequivocally that trapping alone on a landscape scale cannot reduce rat numbers sufficiently to make the effort and the cost worthwhile. One of the main reasons for this is that traps cannot be checked frequently enough when you have a couple of thousand traps spread over a large area. Other issues include:

- a trap can catch a rat on the first night it is set and thereafter is useless until next checked - in our case a month later
- the lure (usually peanut butter) may get eaten by slugs, snails, and ants leaving the trap with nothing to attract rats
- some rats can get trap shy or have resistance to entering any kind of station, especially as food abundance increases as rat numbers decline

In 2005, the Sanctuary landowners reluctantly agreed, and not unanimously, to the very cautious introduction of Vitamin D3 or cholecalciferol to be ‘pulsed’ twice a year. Pulsing describes the method whereby baits are put out and, at the end of a specified time, the remains retrieved – this method limits the amount of time that bait is present in the environment.

Feracol, (brand name) was chosen as it was deemed acceptable for rat suppression on organic farms and it had a limited risk of secondary poisoning. It was presented as a 16-gram waxed bait on biodegradable card stapled to trees every 25 metres on tracks up to 100 metres apart.

This toxin was prudently introduced for just 1 week for the first pulse, 3 weeks in the second pulse, and 6 weeks thereafter. The longer pulses were necessary to ensure that less dominant animals had time to access to the bait following the dominant animals. The graph below shows how effective these Feracol ‘pulses’ were over the first 18 months. Trapping was carried on during and between the pulses.



The prime target of pest suppression is to reduce rats to 5% or less tracking tunnel rates and this graph illustrates how difficult this is to achieve.

During this trial of cholecalciferol, the Sanctuary also trialed the nontoxic 'No-Rats' bait. After just 6 months the rat tracking tunnels in the trial area shot up from 5% to 50% and its use was discontinued. This pellet bait absorbed moisture and the bags of pellets weighed more at the end of the trial than when first put out.

In 2007, a Masters Science Student began her thesis on the Spatial Distribution of Rats in the Windy Hill Sanctuary. She was able to show over the following year that we were not able to keep rat numbers at sufficiently low numbers with this mix of trapping and Feracol pulsing.

At the same time, there was a worldwide shortage of Vitamin D3, which is prescribed for people who do not get enough sunlight to boost the body's own Vitamin D3 production, and this pushed the price up tenfold.

Along with the need to further reduce the levels of rats we were also aware of the recommended practice of changing baits regularly to reduce the risk that rats will build up a tolerance to a toxin over long time periods.

In response to this, the Trust called in a range of specialists in pest management and had a think tank about where to next. This prompted the introduction of brodifacoum- a second generation anti-coagulant - as the sole tool for rat suppression programme in 2009.

The results of this trial will be the subject of the next article.

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