

## info you requested Friday

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 3 attachments (2 MB)

GBIRd - Genetic Biocontrol of Invasive Rodents.pdf; gene drive.pdf; Eradications-How-and-Why.jpg;

I've attached a few other things but I think below may be what you remembered (from FAQs for Lord Howe Island at <https://lhirodenradicationproject.org/faq/>):

Could the SenesTech fertility control method have been used?

Fertility control has been used with limited success as a method of pest management in a few species, primarily larger mammals, where individuals can be targeted for treatment. Experimental sterilization methods have included chemicals and proteins delivered by vaccine, and genetically-modified viral pathogens. However, the effectiveness of these experimental techniques in the wild and their impacts to non-target animals are unknown. The possibility of using a new rodent sterilisation technology called "Contrapest", developed by SenesTech Ltd, was considered with the following issues identified:

- The product "Contrapest" aims to reduce rat populations through sterilisation, limiting fecundity but leaving some animals to defend territories i.e. ongoing control not eradication.
- It requires every female to be dosed with the product i.e. it needs to be regularly dispensed as there is no inherited or contagious transmission of the reduced fertility.
- The fertility control compounds (VCD and Triptolide) are not species-specific and could affect other mammals including humans.
- Currently the product is designed for rats although the developers state that it has the potential to be modified to target mice, along with other species, although dispensing the appropriate dosage is problematic at this stage.

The product was not suitable for the rodent eradication program on LHI as:

- The product aims to reduce rat numbers, not eradicate them.
- The product needs to be ingested over a prolonged period (approx. 75 days) and all female rats would need to be exposed to the product. This would effectively mean that the product would need to be put out continually for the foreseeable future.
- While reducing rat numbers would have some benefits, only total eradication of rats and mice could give the anticipated ecological, social, economic and human health benefits.
- The product is currently dispensed by adding it to water. This is problematic for LHI as dispensers would have needed to be put over the whole island at approximately the same spacing as bait stations. The product needs to be consumed over many feeds as it affects the reproductive system slowly meaning that the bait would need to be made available in every territory for a prolonged period to affect even one generation of rats.
- Even if the product was used on the accessible areas and was able to reduce numbers, this would only be short term while the product was being dispensed. Also, rodents from the untreated areas would soon move in as resources, food and territory were freed up
- The current product Contrapest is only for rats which would leave mice untreated.

Contrapest has been investigated for both the LHI program and by other rodent eradication organisations internationally. Its use would be experimental, hence it has not been considered a feasible option for rodent eradication currently or in the foreseeable future.

Repeated baiting of uncertain oral contraceptives on an inhabited and rugged island across seasons or capturing, vaccinating, and releasing every member of a single gender of the LHI rodent population was not considered

feasible. The lack of data and tools disqualified the use of fertility control from detailed consideration.

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