

Tetra Pak Tracking Tubes to detect dormice

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Introduction

The common dormouse (*Muscardinus avellanarius*) is a very cryptic inhabitant of shrubby woodland and hedgerows. This protected species is classified as endangered in many European countries. To enforce its legal protection and to ensure the success of conservation projects, current data about the occurrence of the common dormouse are very important. A variety of survey methods have been developed and tested during the last few decades. Many methods are either labor intensive and invasive have low "hit rates" and require profound knowledge or deliver results only after a long time. A method referred to as the "nut hunt" was previously the most efficient and commonly used method to search for gnawed hazel nuts. The drawback of this method is that at sites without hazel or in years without nut production, this survey method yields no results. For the revision of the Red List of Endangered Mammals in Switzerland, Simon Capt and Paul Marchesi used Wooden Tracking Tubes to detect dormice (CAPT, 2010). In this study tracking tubes were designed out of "Tetra Pak" and tested against the Wooden Tubes.

Aim

Simplify, optimize and customize Tracking Tubes as a method to detect dormice by members of school classes, conservation associations and other interested people.

Hypothesis

Tetra Pak Tracking Tubes are as effective as Wooden Tracking Tubes to detect common dormice (*Muscardinus avellanarius*).

Methods

Walking through a Tracking Tube, dormice wet their feet with ink and leave their footprints on tracking paper. Ink and tracking paper were made following the recipe of King and Edgar (1977) and were used both in Wooden Tracking Tubes and in Tetra Pak Tubes.

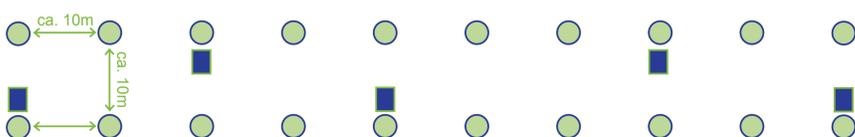
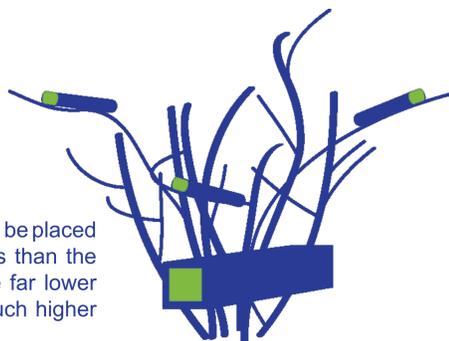
Wooden Tubes:

4.5kg / 100cm x 18.5cm x 14.5 cm

Tetra Pak Tubes:

75g / 43cm x 6cm x 9cm

The much smaller and lighter Tetra Pak Tubes can be placed easily on more branches and in greater heights than the larger and heavier wooden tubes. This and the far lower construction costs per tube allow the use of much higher densities of Tetra Pak Tubes per survey.



Setup – 20 tubes out of Tetra Pak (○) and 5 out of wood (■) were placed each in four different habitats at Winterthur, Switzerland. The tubes were spread over a total length of 100m with 10m distance between individual tubes.

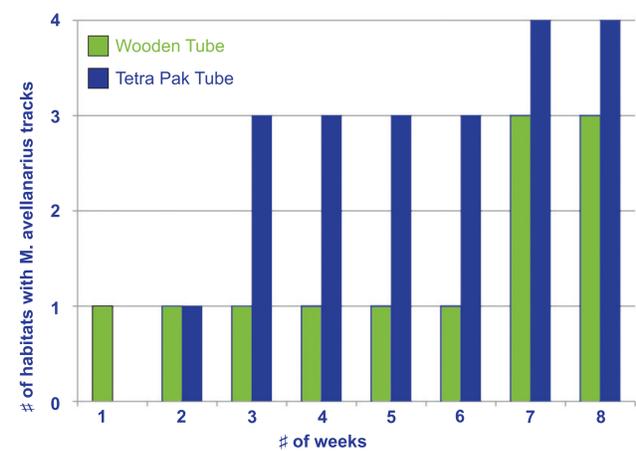
Period – Over a period of 2 months (27th of July to 21st of September 2013) the tubes were checked weekly.

Statistics – Pearson Chi² test using IBM SPSS Statistics 22.

Results

	Tetra Pak Tubes	Wooden Tubes	Study Setup
# <i>M. avellanarius</i> tracks	47	8	55
# tubes x # controls	623	130	753
Detectability	7.54%	6.15%	7.30%

The ability to detect *Muscardinus avellanarius* between the tube types was not statistically different ($Chi^2 = 0.355$; $df = 1$; $p = 0.681$).



The occurrence of *Muscardinus avellanarius* could be detected in a shorter study period and in a greater number of habitats with Tetra Pak Tubes due to their higher number and greater density compared to the Wooden Tubes.

Conclusion



The survey method to detect dormice by the use of Tracking Tubes is

- simplified** – Tetra Pak Tracking Tubes are easily built out of a waste product at very low costs.
- optimized** – Tetra Pak Tracking Tubes can be positioned on small branches and put out in the field in high densities.
- customized** – e.g. Tetra Pak Tracking Tubes can be made and handled easily by school children. The tracks can be sent by post to experts for verification.

References

CAPT, S. (2010). *Anleitung für die Feldarbeit mit Spurentunnel*, CSCF, unveröffentlicht, S. 12.

KING, C.M. & EDGAR, R. (1977). *Techniques for trapping and tracking stoats (Mustela erminea): a review, and a new system*. New Zealand Journal of Zoology, 4 (2), S. 193-212.