Recovery of common vole populations (*Microtus arvalis*) after rodentice application

Susanne Hein¹, Jens Jacob¹

¹ Julius Kuehn Institute, Institute for Plant Protection in Horticulture and Forest, Vertebrate Research, Münster
Background

• common vole = vertebrate pest species

• management: rodenticides

→ detailed information on ecology and behaviour necessary
Objectives

• recovery of common vole populations
  – survival of residents or immigration
  – recovery time/recovery rate
  – kinship analysis?

• population development
  – demographics: sex ratio, reproductive state
  – survival

• life trapping vs. non-invasive hair sampling
Study Area
Trapping & Sampling

- live trapping with Ugglan® Live Traps
- non-invasive sampling with hair tubes
Study Design

- **treatment**
  - 2x8 + 7
  - transect of hair tubes

- **control**
  - 3x8 + 2x7
  - transect of hair tubes

Dimensions:
- 85 m x 50 m
- Transect distances: 25 m, 10 m, 20 m, 15 m, 10 m, 20 m, 25 m
Study Design

• 244 Ugglan Live Traps
  – 23 traps on treatment
  – 38 traps on control
  – 4 replicates

• 268 hair tubes
  – 30 tubes on border treatment/control
  – 37 tubes on control
Measures

- species
- weight
- sex (♀ ♂)
- reproductive status
- PIT (*passive integrated transponder*)
Field Data 2013

- March
- April
- May
- June
- July
- August
- September
- October

voles/100 trap nights
## Results I

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<th>sex</th>
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<th>R/C</th>
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**Red-highlighted IDs** indicate that the tissue sample was collected from the ears of these individuals.
Enclosure Pre-Trials

- non-invasive sampling with hair tubes
  - 4 enclosures
  - on runways/next to runways
  - no baiting, baiting with raisins/peanut puffs
Enclosure Pre-Trials

pictures: privat
Results II

Bar graph showing the relative numbers of visits [%] for different baits: without bait, peanut puffs, and raisins, differentiated by location (on runways and next to runways) with a sample size of 28.
Summary

• degradation year

• ecological and behavioural knowledge needed

• live trapping and/or non-invasive hair sampling

• very few data
Outlook

• determination of
  – mechanism of recovery
  – recovery rate & recovery time

• genetic analysis
  – populations dynamics: species, sex, individuals
  – kinship analysis: dispersal behaviour

• calibration live trapping vs. hair tubes
THANK YOU VERY MUCH FOR YOUR ATTENTION!