

Poster 25 – Comparison of baiting strategies in common vole management

Kyra Jacoblinnert¹, Caspar Goedecker², Stefan Halle², Detlef Schenke³, Christian Imholt¹, Jens Jacob^{1*}

¹Julius Kühn-Institute, Federal Research Institute for Cultivated Plants, Institute for Epidemiology and Pathogen Diagnostics, Münster, Germany

²Friedrich Schiller University Jena, Institute of Ecology, Jena, Germany

³Julius Kühn-Institute, Federal Research Centre for Cultivated Plants, Institute for Ecological Chemistry, Plant Analysis and Stored Product Protection, Berlin, Germany

*email of corresponding author: jens.jacob@julius-kuehn.de

Pest rodents can cause extensive damage to agriculture, forestry, food storage, and infrastructure while also posing a significant risk to public health and livestock due to the spread of zoonotic pathogens worldwide. In Europe, the most common pest rodent species is the common vole (*Microtus arvalis*), especially during periodic outbreaks every 3-5 years. Current management largely relies on rodenticidal bait. A possible alternative method to manage the excessive numbers of common voles might be the use of environmentally safe compounds and suitable baiting methods for fertility control delivered through baits. In either case, a sufficient proportion of the population needs to consume an effective dose of bait.

In a laboratory experiment, we developed a bait with the quantitative marker Iophenoxic acid (IPA) for common voles to evaluate baiting strategies in a series of enclosure experiments. Wheat-based bait with IPA was placed in bait boxes or directly into the tunnel system entrances at different seasons and common vole abundances. Voles were live-trapped, individually marked and blood samples were collected to relate IPA blood residues to bait uptake.

First results indicate that voles that consumed bait offered in bait boxes have higher IPA blood residues and hence ate more bait than voles that lived in the enclosures where bait was inserted into the tunnel systems. Furthermore, heavier and therefore older voles are more likely to have IPA blood residues than animals with a lower weight.

The results of this study might help to improve baiting techniques to manage overabundant rodent pest species regardless of the compounds to be delivered.

The work was supported by funds of the Federal Ministry of Food and Agriculture (BMEL) based on a decision of the parliament of the Federal Republic of Germany via the Federal Office for Agriculture and Food (BLE) under the Federal Programme for Ecological Farming and Other Forms of Sustainable Agriculture (FKZ 2815NA113).