

## **SECU-RAT, A PUBLIC LITTER BIN ACCESSORY AS A NEW TOOL TO MONITOR AND CONTROL RAT POPULATIONS IN THE URBAN ENVIRONMENT – EFFICACY STUDY**

**M. SAGE<sup>1</sup>, J. HOFFMANN<sup>2</sup>, P. RIEHLING<sup>2</sup>, V. SCHALLER<sup>2</sup>, J. DAT<sup>2</sup>**

<sup>1</sup>Faune INNOV - Wildlife Innovation and SECU-RAT, BESANCON, France

<sup>2</sup>SECU-RAT, BESANCON, France

**Abstract** Rats pose a significant problem to society (zoonotic diseases, severe property damage and food loss). The urban environment favors high population density, especially of the Brown rat (*Rattus norvegicus*). Increasingly high infestation levels are observed, in particular where human presence is high (e.g. urban parks and gardens, along riverbanks, where birds are fed or on picnic spots). Due to high food availability and the presence of attractive habitats in these areas, rat population control is particularly difficult and often ineffective. Placing traps or rodenticides close to rat burrows, habitats or food sources is essential, but the discretion requirement, bait box degradation risk, and children safety or that of non-target species are major issues linked to these practices. Public bins are a crucial issue because they offer food to rats, but also because they fit into the urban outdoor environment and are often placed near rat habitats such as flowerbeds, bushes, etc. SECU-RAT responds to the challenge of detecting the presence of rats and laying rodenticide baits and traps exactly where they are needed in an urban outdoor environment: under public bins. It is adapted for distance monitoring of rat populations and allows room for two snap traps or rodenticide baits that can only be accessed once it has been opened with a key. Whether for chemical control or trapping, SECU-RAT offers a high level of tamper-resistance for children, dogs and other non-target animals (see the poster ‘Safety considerations for children, dogs and urban birds’), and is perfect for sensitive accounts where discretion is essential. Because optimal efficiency is required, prototypes were tested and implemented in different conditions in two different cities. Efficacy of each prototype was evaluated according to rat detection frequency and placebo bait consumption and compared to classical bait boxes placed in similar settings. Manufactured in France to ensure quality and durability, SECU-RAT is patented and compatible with different litter bin models and will be distributed internationally.

**Key words** Rodent population control, monitoring, secure, effective