

## **BIOCIDE REDUCTION IN MUNICIPAL PEST MANAGEMENT LIFE19 ENV/IT/000358: A NEW DIGITAL SUSTAINABLE APPROACH IN THE CITY'S IPM: THE LIFE-BIOREPEM PROJECT**

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**Abstract** Life BIOREPEM (Life19 ENV/IT/000358) is a 40-month project started in 2020, coordinated by the Municipality of Fiumicino with a total budget of 1,525,713 euros. Other project partners are: the Municipality of Francavilla al Mare, the ISPRA, A.ge.i. Scrl, Natur-Lab Ass. and Fondazione Ecosistemi. At the heart of the new approach is the use of technological traps for the mass capture of rats, digital monitoring devices and a web portal developed ad hoc for management and monitoring purposes. The portal allows for the analysis of information, thus monitoring infestations and evaluating the interventions carried out. The digital management of IPM allows a specific decision-making and improves the overall effectiveness of the action. Green Public Procurement criteria are also developed to support new procurement procedures for municipal rat control services. Furthermore, an LCA (Life Cycle Assessment) analysis has demonstrated the environmental sustainability of the Biorepem strategy.

Table 1 shows the values related to a hypothesized comparison between the use of the Biorepem system and the traditional strategy with chemical anticoagulants. A structure to be monitored due to its criticality is considered with 4 buildings with a total perimeter of ~3,000 m. In both strategies, maintenance is calculated monthly. The digital systems used in both strategies have not been considered in the costs. The use of 24 Ekomille or 300 rodenticide bait dispensers managed respectively in Biorepem and traditional

Anni	Chimica	Eko1	Eko3	Eko 5
1	11.235,41 €	17.952,00 €	7.488,00 €	5.395,20 €
2	6.795,95 €	1.657,20 €	6.889,20 €	4.796,40 €
SubTot 2	18.031,36 €	19.609,20 €	14.377,20 €	10.191,60 €
3	6.795,95 €	1.657,20 €	6.889,20 €	4.796,40 €
SubTot 3	24.827,32 €	21.266,40 €	21.266,40 €	14.988,00 €
4	6.795,95 €	1.849,36 €	1.849,36 €	4.988,56 €
5	6.795,95 €	1.849,36 €	1.849,36 €	4.988,56 €
SubTot 5	38.419,22 €	24.965,12 €	24.965,12 €	24.965,12 €
6	6.795,95 €	1.849,36 €	1.849,36 €	1.849,36 €
7	6.795,95 €	1.849,36 €	1.849,36 €	1.849,36 €
8	6.795,95 €	1.849,36 €	1.849,36 €	1.849,36 €
9	6.795,95 €	1.849,36 €	1.849,36 €	1.849,36 €
10	6.795,95 €	1.849,36 €	1.849,36 €	1.849,36 €
SubTot 10	72.398,98 €	34.211,92 €	34.211,92 €	34.211,92 €

mode is considered, considering waste disposal according to current legislation and the timing with the related personnel costs, originating from the data provided by the companies operating in the Biorepem project and from the experience gained during the project activities (3 years).

**Key words** Rodent control, anticoagulants, rodenticide bait