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Survival of common wall lizards: experiences from a study using scentless plasticine lizards

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The potential influence of predators on lacertid lizards has been studied by using models made of soft materials (e.g. plasticine), which allows the detection of predators. The comparison of previous results is complicated because of differences in the numbers of plasticine models used, their spatial pattern (density), and the duration of studies. The typical scent of plasticine also could influence the results, because the number and abundance of predators with olfactory cues differ among areas. In order to reduce biases we used scentless plasticine lizard models coated with liquid rubber (PlastiDip®). We estimated the density of the lizard population on stone walls in order to imitate the real density in our experiment with plasticine models. The density of common wall lizards was 8.2 ind /100 m² on the stone walls of a vineyard in the city of Pécs (Hungary) in August 2015; accordingly there was one lizard per 10 m. We placed 25 scentless plasticine lizards on the stone walls, with 10 m distance between them. In the other transect 25 lizard models were placed as well, but the distance between them was 20 m. During four weeks 24% of the densely spaced plasticine lizards and 40% of scarcely spaced plasticine lizards were attacked, but based on the number of predation events the difference was not significant. We calculated the predation rate and the daily survival rate of lizard models. The daily survival rate of densely spaced lizards was 0.99 (99.1%) and that of scarcely spaced lizards was 0.98, but this difference was not significant either. Density-dependent predation was not detected by using plasticine lizards. Surprisingly, predation pressure was higher on scarcely spaced individuals. Our results suggest that in the study area there were few potential lizard predators, or the scentless, unmoving plasticine lizards were not attractive for them. Plasticine lizards were mainly predated by mammals (e.g. marten) while the impact of bird predators was smaller than expected. Predators attacked the head of models more frequently than the trunk, tail or limbs, but significant preference of body parts was not detectable. From our experience we suggest using scentless plasticine models, and we also suggest the calculation of daily survival rates in order to produce results that allow for the comparison of different studies.