ESCAPE DISTANCE IN RELATION TO SUBSTRATUM TYPE, SEX, REPRODUCTIVE STATUS AND TAIL CONDITION IN TWO LACERTIDS WITH CONTRASTED HABITS: *ZOOTOCA VIVIPARA* AND *IBEROLACERTA HORVATHI*

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Antipredatory behavior is essential in those animal species which are basal or intermediate in a trophic chain. Lizards are among the most widely predated organisms in the temperate zone ecosystems, being preyed upon by a variety of predators including e.g. birds of prey, carnivore mammals, snakes, etc. In this paper we analyse the correlates of escape distance in two sympatric lacertid lizards with contrasted life-history traits, i.e. the ground-dwelling common lizard (*Zootoca vivipara*) and the rupicolous Horvath's rock lizard (*Iberolacerta horvathi*).

Lizards were studied during the summer 1996 at a mountainous area in north-eastern Italy (Tarvisio Forest, province of Udine). Lizards were approached to quantify their escape distance (precision ± 5 cm), then were captured and marked.

We also recorded on capture their species, SVL, age (adults or subadults), sex, habitat of capture, microhabitat type, tail condition (whether whole, broken or regenerated), reproductive status (pregnant or not, if females), and time of day.

Data were processed by a Statistica version 6.4 PC package, with all tests being two-tailed and alpha set at 5%. We used parametric tests, given that all the variables were normally distributed or were log-transformed to achieve normality. We used several one-way ANOVA sets to establish eventual differences between groups, i.e. between species, sexes, etc.

In both species, males escaped at significantly higher distances than females (see Tab. 1) (*Z. vivipara*: $F_{2, 84} = 7.80$; $P < 0.001$; *I. horvathi*: $F_{2, 78} = 3.24$; $P < 0.05$), and there was no differences in either species as for the reproductive status effects on escape distance of females (*Z. vivipara*: $t_{27} = -1.55$; $P = 0.13$; *I. horvathi*: $t_{30} = 1.39$; $P = 0.17$). There was a significant effect of tail status on *Z. vivipara* escape distance with specimens with broken tails escaping at a shorter distance than intact tail individuals (146.4 ± 55.5 vs 90.32 ± 38.7; $t_{85} = 5.16$; $P < 0.001$), but not the same in *I. horvathi* ($t_{78} = 1.36$; $P = 0.18$). Substratum type had a significant effect on escape distance in both species (*Z. vivipara*: $F_{5,75} = 3.67$; $P < 0.005$; *I. horvathi*: $F_{3,77} = 5.72$; $P < 0.001$).

Our study highlighted noteworthy similarities between species as for their escaping response to an approaching potential predator. Indeed, the two sexes showed an escaping strategy clearly different with males escaping at a longer distance than females. The juveniles showed an intermediate response between males and females, but this was likely dependent on the fact that our variable included the two sexes pooled. However this scenario appear to be complicated by the substratum type and the tail status but not by the reproductive status (in females).

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Tab. 1. Summary of the means (and dispersion measures) of the escape distances (cm) in the two study species at the study area.

Z. vivipara	N	Mean	Std. Dev.
Males	39	153.49	57.6
Females	29	104.35	45.8
Juveniles	13	136.54	60.9
I. horvathi			
Males	40	175.05	75.3
Females	32	138.44	57.4
Juveniles	9	191.22	90.0

Key words: *antipredatory behaviour, approach distance, lizards, Italy*