Abstract

During evolution, the natural selection favours individuals with the best survival strategy and the highest reproductive success. From the evolutionary point of view, hybridization plays an important role in the process of speciation. Avoiding predators by choosing the most appropriate antipredator strategy increases the animal's chances of survival as well. Studying fitness consequences of hybridization and predation in *Eublepharis macularius* (Eublepharidae) was the main objective of this theses. Compared to other vertebrate groups, the reliable records on hybridization and its effect on the hybrid's fitness (fertility, survival) in lizards are scarce, despite their ability to hybridize between genetically distant species. These effects were examined in two species of eyelid geckos (*E. macularius* and *E. angramainyu*). We aimed to discover whether they were willing to hybridize with a heterospecific species and how the fitness of the hybrids would be affected. Similarly, were studied more genetically related forms of *E. macularius* species complex, the potential precopulatory barriers, and fitness cost of this hybridization. Analysis of published data has shown that the lizards hybridize between very phylogenetically distant species and are even "more successful" than birds or turtles. Surprisingly, we didn't prove relationship between the genetic distances of parental species and the sterility or unviability of hybrids. The F1 hybrids were typically at least partially fertile and the genetic introgression was possible. The sufficient precopulatory barriers to prevent both the interspecies and the intraspecies hybridizations were not found. Significant was the finding that the interspecific hybridization between the *E. angramainyu* and *E. macularius* was the first record of crossing the species with temperature-dependent sex determination (TSD) in lizards. At the same time, this cross belongs to the hybridization between genetically most distant species in lizard compared with the available literature. Analyses of morphometric and colour traits confirmed the phenotypic distinctiveness of both parental species of *E. angramainyu* and *E. macularius*, as well as their F1 hybrids. *E. angramainyu* species grew more slowly and the larger size was attained by a longer period of exponential growth. I demonstrated that F1 hybrids were viable and fertile and the introgression might be enabled via backcrossing. The interspecific hybrids, except for F2 generation, displayed neither malformations nor reduced survival or growth. Based on these findings, the lizards can be expected to hybridize more frequently and even between more genetically distinct species than what has been known. Finally, optimal antipredator strategy changes over ontogeny were documented in *E. macularius*, as juveniles deter a predator by vocalization, while the adults rather escape and benefit from their cryptic colouration.