

Biological Invasions

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Drosophila as models to understand the adaptive process during invasion

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Insect Invasions

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Abstract

The last few decades have seen a growing number of species invasions globally, including many insect species. In *drosophilids*, there are several examples of successful invasions, i.e. *Zaprionus indianus* and *Drosophila subobscura* some decades ago, but the most recent and prominent example is the invasion of Europe and North America by the pest species, *Drosophila suzukii*. During the invasive process, species often encounter diverse environmental conditions that they must respond to, either through rapid genetic adaptive shifts or phenotypic plasticity, or by some combination of both. Consequently, invasive species constitute powerful models for investigating various questions related to the adaptive processes that underpin successful invasions. In this paper, we highlight how *Drosophila* have been and remain a valuable model group for understanding these underlying adaptive processes, and how they enable insight into key questions in invasion biology, including how quickly adaptive responses can occur when species are faced with new environmental conditions.