

Invaders eating invaders: potential trophic interactions between the amphipod



We investigated potential interspecific predation between two invasive crustacean species, currently widespread and co-occurring in European inland waters: the Ponto-Caspian amphipod *Dikerogammarus villosus* (Gammaridae) and the North American spiny-cheek crayfish *Orconectes limosus* (Cambaridae). We evaluated interactions of adult specimens of *D. villosus* and juvenile *O. limosus* (from the 3rd developmental stage – DS) under conditions with and without feeding. We used two different experimental setups: short-term (one-week) rearing in aquaria each containing 30 specimens of either single-species or mixed stock, and 20-daylong rearing in small circular plates with one individual of each species. In the aquaria, a significant effect of *D. villosus* presence on survival of *O. limosus* stocks was found, with stronger influence on unfed stocks. Survival of *D. villosus* was not influenced by either *O. limosus* presence or feeding. Direct predation of *D. villosus* on juvenile *O. limosus*, predominantly on the 3rd DS, was often observed in the small plates. The 5th DS *O. limosus* was killed only a few times and was already able to feed on adult *D. villosus*. Our results show that both species are able to affect each other negatively through intra-guild predation: *D. villosus* may

successfully feed on juvenile *O. limosus* (3rd and 4th DS), but larger crayfish can resist predation by the amphipod.

Auteurs du document : M. Buřič, L. Kočí, A. Petrusek, A. Kouba, P. Kozák

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