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Conference Abstract

Insect herbivore attack on Asteraceae is context-dependent and affected by the origin of both the herbivore and the plant species

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Abstract

The remarkable success of many invasive non-native species is thought to be due in part to “enemy release”, the hypothesis that introduced species escape their natural enemies, and thus increase in abundance and impact. Evidence for enemy release is mixed, perhaps in part because most non-native vs. native comparisons do not clearly account for plant phylogeny, density, the nativity, different plant organs and life stages or diet preference of herbivores. Here, we tested enemy release with a community approach, in which herbivory was compared between confamilial or congeneric invasive non-native and native species that were all highly abundant, or dominant, in North American grasslands. We found that invasive dominant plants were attacked much less frequently by herbivores than co-occurring native dominants, and this difference was more pronounced for leaves than flowers. Flowering and non-flowering native plants suffered

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more damage than invasive plants in either stage. Non-native specialist herbivores (many of them introduced as biocontrol agents) and generalist herbivores of unknown origin were more common on invasive species, and in contrast, native specialists preferentially attacked native plant species. Our results support the enemy release hypothesis, but the magnitude of herbivore damage is highly context-dependent and related to feeding guild and origin of both herbivores and plant species.

Keywords

community approach, diet preference, enemy release, invasive species, herbivore damage, life stage, North America, origin

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K.Š., L.S., D.M.B. and P.P. conceived the ideas and designed the study, K.Š. and L.S. collected the data, P.Š. and K.Š. analyzed the data.

Conflicts of interest

The authors have declared that no competing interests exist.