

Submitted Abstract

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Title	Capture The Drivers: Functional Traits Within Two Alpine Species Vary In A Resource And Energy Mosaic Rather Than Along An Elevation Gradient.
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Abstract

Intraspecific trait variability (ITV) is an important component of the plant species responses to climate changes. Alpine ecosystems are exposed to drastic changes, and ITV could mitigate the effects on plant communities. This study focused on the intraspecific variability of the specific leaf area, leaf dry matter content, and vegetative height of *Carex firma* and *Dryas octopetala* along a 500 m elevation gradient in the Eastern Austrian Alps. Slope, vegetation cover, exposition, and community average of ecological indicators were considered as environmental factors. We found large ITVs for both species and no clear patterns along the elevational gradient. Instead, soil resources and thermic indicators explain the patterns the best. Both species are similarly ranked among the conservative species in the surveyed communities and showed similar patterns of response despite their affiliations to different functional types. Our results suggest that the common hypothesis of biodiversity homogenization of mountains with climate warming does not consider enough what really matters to plants, i.e. the habitat conditions. Elevation appeared as one component of the energetic gradient highlighted in this study rather than an integrative ecological gradient. It is likely that the environmental heterogeneity of alpine ecosystems is buffering their functional diversity loss.