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Sommario/riassunto

Competitiveness describes a key ability important for plants to grow and survive abiotic and biotic stresses. Under optimal, but particularly under non-optimal conditions, plants compete for resources including nutrients, light, water, space, pollinators and other. Competition occurs above- and belowground. In resource-poor habitats, competition is generally considered to be more pronounced than in resource-rich habitats. Although competition occurs between different players within an ecosystem such as between plants and soil microorganisms, our topic focusses on plant-plant interactions and includes inter-specific competition between different species of similar and different life forms and intra-specific competition. Strategies for securing resources via spatial or temporal separation and different resource needs generally reduce competition. Increasingly important is the effect of invasive plants and subsequent decline in biodiversity and ecosystem function. Current knowledge and future climate predictions suggest that in some situations competition will be intensified with occurrence of increased abiotic (e.g. water and nutrient limitations) and biotic stresses (e.g. mass outbreak of insects), but competition might also decrease in situations where plant productivity and survival declines (e. g. habitats with degraded soils). Changing interactions, climate change and biological invasions place new challenges on ecosystems. Understanding processes and mechanisms that underlie the interactions between plants and environmental factors will aid

predictions and intervention. There is much need to develop strategies to secure ecosystem services via primary productivity and to prevent the continued loss of biodiversity. This Research Topic provides an upto-date account of knowledge on plant-plant interactions with a focus on identifying the mechanisms underpinning competitive ability. The Research Topic aims to showcase knowledge that links ecological relevance with physiological processes to better understanding plant and ecosystem function.