XV Congreso Nacional de la AEET, 2021

Lunes, 18 de octubre – jueves, 21 de octubre, Plasencia, Cáceres

El valor de la Naturaleza para una sociedad global

Libro de resúmenes

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18 al 21 de octubre de 2021
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SG.03-O-15

Auditorio - jueves, 21 de octubre, (bloque mañana: 11:30 h.)

Is phylogenetic distance a good predictor of competition? A common garden experiment with Mediterranean shrub species.

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Mediterranean scrublands that develop on basic substrates in the center of the Iberian Peninsula stand out for their high diversity (up to 48 species). This is remarkable because these communities develop in habitats subjected to strong climatic and edaphic restrictions, which cause a strong filtering of species resulting in similar functional patterns. In this context, biotic interactions are likely to be major conditioners of both the realized niche of species and community assemblage. To characterise these interactions and their possible changes under drought, we conducted a common garden experiment with the most representative species of our system, growing 4 species considered as focal (phytometers) coupled with 16 companion species. Pairs of seedlings were arranged in a total of 860 pots assigned to under two contrasting watering conditions (well-watered and drought, 20% and 10% of soil moisture, respectively). Our aim is to determine whether the intensity of competition, measured by the phenotypic expression of the focal plant, depends on the phylogenetic and functional distance to its companion. We expect competition to be more intense between more closely related species, as these tend to be functionally more similar, and under water stress conditions. For this purpose, phylogenetic distances between pairs of species were measured and morphological (size, biomass, SLA and LDMC) and physiological (chlorophyll fluorescence, Fv/Fm) traits related to plant performance were characterised. The intensity of competition observed between pairs of species will be discussed in relation to the phylogenetic and functional distance between species.

SG.03-O-16

Auditorio - jueves, 21 de octubre, (bloque mañana: 11:45 h.)

Warming and drought stress in plants with contrasting functional strategies induce different phenotypic variability in their offspring

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Phenotypic plasticity, both within and across generations, is a mechanism by which plant species respond to changing environmental conditions. This is particularly relevant in a context of global change since organisms face rapid variations of climatic conditions to which should adjust and adapt. Specifically, plasticity across generations is receiving special attention, but the understanding of key aspects, such as the environmental conditions in which it occurs or the role that different functional groups might play in this process, remains understudied. Here, we investigated the magnitude and variability in the responses of herbaceous plant species with contrasting functional strategies to two main climatic stressors (warming and drought), analyzing the heritability of these responses from maternal plants to their offspring. With this aim, we conducted field surveys and greenhouse experiments with five co-occurring dominant herbaceous species of Mediterranean rangelands and measured their performance in terms of growth, reproduction and survival in response to increased temperature and decreased water availability. We found that resource-acquisitive species tended to show greater sensitivity and phenotypic variability in response to climatic treatments. However, the opposite trend was observed in the next generation, presenting the offspring of conservative species a high phenotypic variability when comparing seeds coming from mother plants exposed to different climatic scenarios. Our results suggest that the effect that maternal environment have on offspring performance vary in different functional groups of plants and its role in a context of adaptation to climate change is discussed.