CBGP
Centre de Biologie pour la Gestion des Populations

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Grande salle + visioconférence

40-YEAR CHANGES IN WEED COMMUNITIES INDUCED BY MANAGEMENT AND CLIMATE CHANGE IN MEDITERRANEAN VINEYARDS

par
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- Weed communities located in Mediterranean vineyards have experienced significant changes in agro-environmental conditions as weed management strongly evolved these past decades and as climate change in the Mediterranean exceed global trends for most climate variables.

- In this study, we quantified to which extent weed communities have shifted from the 1980s to the 2020s in response to climate and weed management changes, using a historic network of 40 Mediterranean vineyards and 374 floristic surveys in Montpellier, France. In four decades, the annual range of temperatures (i.e. the difference between the warmest month's and the coldest month's mean temperatures) increased by 1.2°C and the summer temperatures by 2°C. Weed management diversified over time with the adoption of mowing that replaced the chemical weeding. Current weed communities were 41% more abundant, 24% more diverse and with a less even distribution of abundance across species than the 1980s communities at the vineyard level. Current communities were composed of more annuals (57% of annual species in the 1980s versus 80% in the 2020s) with lower lateral spread ability and seed mass and were composed of fewer C4 species.

- Climate change induced more stress-tolerant communities in the 2020s while the diversification of weed management practices over time filtered less competitive communities. This study shows that weed communities are adapting to climate change and that weed management is a strong lever for action to model more diverse and functional weed communities in the future.

- Cet exposé sera en Français.