

Plant biodiversity in French Mediterranean vineyards

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In a context of agricultural intensification and increasing urbanization, the biodiversity of farmed plots is a key to improve the sustainability of farmed landscapes. The medium life-duration of the vineyards as well as their location in Mediterranean region are favorable to plant biodiversity. We studied 35 vineyards and if present, their edges, located in three French Mediterranean terroirs: Bandol, Pic Saint Loup and Terrasses du Larzac. We collected botanical information (floral richness et diversity, biological traits), and analyzed their relationships with different factors: social (management, heritage or professional concern), environmental (slope, exposition, geology), spatial (edges, surrounding landscape in a 500 meters radius, distance to the nearest large city). Vineyards are generally heavily disturbed by intensive practices like tilling and application of herbicides, and for this reason their floral diversity is low. This is particularly true in Bandol terroir, in accordance with the standards of the Bandol PDO wine sector. Farmed landscapes and proximity to a large town impact on functional groups, generalist species being overrepresented. If vineyards are surrounded with natural edges, it doubles the floral richness at the plot and edges scale. Species present in vineyards edges are perennial herbaceous species with Euro- Asian and Mediterranean distribution ranges characteristic of prairie and wasteland stages, increasing the functional diversity of vineyards (generalist species). Environmental factors have a lower influence: vineyards are generally located on flat lands. These results suggest that some practices should be encouraged to avoid the biological degradation of vineyards: conservation of tree-lined edges and their extensive management, reduction of chemical weeding, grass-growing using non-cosmopolitan species. These recommendations should also contribute to soil conservation.