How thermal regime and herbivory pressure can affect *Posidonia oceanica* seedlings development during restoration actions

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Active restoration has become a priority action to re-establish the functionality and services of coastal ecosystems, especially those dominated by seagrasses. The seedling-based restoration may represent an appropriate solution, although little information is provided on the influence of biotic and abiotic interactions on the seedling establishment and development. In this study the survival, morphological development (number of leaves and roots, leaf and root length, leaf necrosis) and leaf total phenol content of cross transplanted (origin and development site) *Posidonia oceanica* seedlings were assessed under different thermal regimes and herbivore pressure through a five-months field experiment. Results provide evidence on adaptative or acclimation seedling responses assisting effective seagrass restoration. Seedlings originated from different coasts performed differently to thermal regime and herbivory pressure, as the warm adapted ones survived less but developed more and resisted to the herbivory pressure increasing their phenol content. On the contrary, the cold-adapted survived more and developed less, showing compensating responses. Results here gained encourage the collection of beach-cast fruits from different coasts, the germination in the field and their transplantation regardless their origin, with no need of protecting seedlings from predators.