

Ecological insights into one of the most successful marine invaders: the brown seaweed *Sargassum muticum*

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The processes behind local colonization and establishment of the brown seaweed *Sargassum muticum* were investigated. Results from a wide variety of field and laboratory studies, show that colonisation is benefiting from the semi-lunar periodicity of gamete release (Engelen *et al.*, 2008), but microrecruit survival is not clearly affected by lunar phase and microrecruit survival did not differ from the native brown seaweed *Cystoseira humilis*. Population growth rates increased and became more stable as the species became established and dominant. In this respect especially the persistence of non reproductive adults is of importance, both during the colonization and the establishment phase (Engelen & Santos, 2009). Fauna associated to *S. muticum* differed in the native and introduced range from competing seaweeds at both ranges (Engelen *et al.*, 2013). Multiple food choice experiments showed that meso-herbivores in Portugal prefer native seaweeds as food source rather than the invader (Monteiro *et al.*, 2009; Engelen *et al.*, 2011), this is however not due to chemical defense. On the contrary, waterborn cues released upon the grazing of *S. muticum* induces chemical defense in closely related brown seaweeds (Yun *et al.*, 2012). *S. muticum* benefits from high growth rates and the relative low grazing pressure on the species to increased the competitiveness of the invader. This invader could probably best be typified as a space grabber that relies on a combination of r- and (mainly) K-traits and may benefit from the need of perennial competitors to allocate energy to defense against grazing.

References

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