

Performance comparison of local and non-local genotypes of *Ammophila arenaria* in the Flemish coast and evaluation of the effects on a specialist herbivore

Vermote ELine, Charlotte Van Moorlegem and Eduardo de la Peña

Terrestrial Ecology Unit, Department of Biology, Ghent University, K.L. Ledeganckstraat 35,
B-9000 Gent
E-mail: eline.vermote@ugent.be

Ammophila arenaria, marram grass, is a sand-fixing plant species of coastal dunes that occurs naturally in Mediterranean and Atlantic Europe. For this reason, it is commonly used for the stabilization and restoration of coastal dunes (in Europe and elsewhere). Current and traditional dune management practices often rely on the introduction of allopatric marram stands for sand fixation. However, the introduction of such exogenous plant material can have important effects at local level. To optimize the current management and conservation strategies of these natural systems it is necessary: (I) to assess what type of plant material is optimal (in terms of growth and survival) for re-vegetation purposes and (II) what are the effects on the associated community. With this in mind, we conducted two different experiments; by means of a 'common garden experiment' in three Flemish nature reserves, we compared the growth and survival of different genotypes of *Ammophila arenaria* (coming from different areas of the North Sea and Atlantic Europe); in a second (laboratory) experiment, we evaluated the effect of these marram populations on the multiplication of *Schizaphis rufula*, a specialist aphid inhabiting coastal dunes. The results of the common garden experiment show that geographic distance to the location of introduction is an important factor in the survival and performance of marram grass populations. Similarly, the geographic origin of the plant populations was crucial in aphid performance.