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POLLEN DISPERSAL IN A SELF-INCOMPATIBLE SPECIES, THE WILD CHERRY (*PRUNUS AVIUM* L.)

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Pollen-mediated gene flow is a major component of gene flow in several tree species. Estimates of pollen dispersal have usually revealed considerable long-distance dispersal of pollen. However, the effects of such important traits as mating systems and sexual polymorphisms on patterns of pollen dispersal and male mating success are largely unknown. The general aim of the present study was to describe patterns of pollen dispersal and male mating success (MMS) in a scattered forest tree species, wild cherry (*Prunus avium* L.). The sexual reproduction of the species is controlled by a gametophytic self-incompatibility (GSI) system. Genes controlling the system are known and have been sequenced. This species also often reproduces through resprouting, leading to clusters of incompatible stems. The GSI system is thus expected to have a significant effect on MMS, at least comparable to that of distance or any component of the phenotype. Consequently, we introduced this reproductive character in a spatially explicit mating model. We studied two contrasting populations, one large and continuous, the other small and fragmented. Our study showed that modelling mating system in a GSI species improved MMS predictions; mating system was the main factor explaining variations of MMS in the small population. Our study also showed that pollen dispersal distances are underestimated when GSI is not included in the model as GSI limits mating at short distances. The implications of our results are discussed in the context of environmental change.

Keywords: gametophytic self-incompatibility, pollen dispersal, population size, *Prunus avium*, reproduction system