

P 26: Vegetative and generative maintenance of self-incompatibility in six accessions of German chamomile

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Self-incompatible (SI) plants are able to form ideal mother lines for hybrid crossing in hermaphroditic plants, assuring fertilization from the desired father line. To find out suitable ways to maintain SI was the aim of this study. Among 220 plants of German chamomile (*Matricaria recutita* (L.) Rauschert) within six accessions SI-genotypes were selected. SI was determined as staying seedless in three flower heads per plant. Initial SI-plants formed the basic paternal generation (P1) of i) maintaining the same genotypes over six months and repeating seed set analysis (P2) and of ii) conducting crossings in three versions (SIxSI, SIxNSI (not SI evaluated plants) and NSIxSI), thereby producing the F1 population. F1 exhibited 78 % SI and P2 62 % SI, indicating a higher environmental than genetic influence on SI. But heritability, calculated from the results of SIxSI crossings, showed high values ($h^2 = 0.71$). Within generative propagation, the influence of generation/crossing version was highly significant ($p = 0.001$) and the cultivar 'Degumille' explored the highest value of SI (86 %) after SIxNSI crossings. Therefore, the intra-cultivar combination of 'Degumille' SI mother plants crossed with NSI father plants can be recommended as the most promising version to maintain SI in chamomile.