



## Pollination and mating system variation in two sister triggerplant species, *Stylidium affine* and *Stylidium maritimum*

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**Background/question/methods:** Triggerplants (*Stylidium*) are relatively short-lived insect pollinated herbaceous perennial or ephemeral annual species. *Stylidium* flowers are characterised by a touch sensitive column that ‘triggers’ when contacted by the insect, effecting pollination. Flowers are protandrous and pollinator behaviour can lead to high levels of geitonogamous self pollination, but there is no evidence for any kind of prezygotic incompatibility. Effective outcrossing appears to be maintained in most perennial triggerplants because of post zygotic seed abortion following self pollination. *Stylidium affine* and *S. maritimum* are sister species occurring in south west Western Australia. Previous studies have indicated that unlike *S. affine* post zygotic seed abortion on selfing is effectively absent in *S. maritimum*. To better understand the evolution of this mating system difference we investigated post zygotic seed abortion levels and mating system variation in four populations of *S. affine* and two populations of *S. maritimum*. We used highly polymorphic microsatellite markers to estimate mating system parameters such as outcrossing rates, biparental inbreeding and the correlation of outcrossed paternity.

**Results/conclusions:** We confirmed that seed abortion is minimal after selfing in *S. maritimum* compared with *S. affine*. Despite the differences in seed abortion levels outcrossing rates were comparable in both species. Correlated paternity was between three and seven times higher in *S. affine* than *S. maritimum* indicating far fewer fathers are contributing to cross pollination in *S. affine* populations. These results are discussed in the context of the stylidium post zygotic abortion system and pollinator behaviour in these species.

# Conference Handbook



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