

**MATING SYSTEMS IN *Nicotiana longiflora* AND *N. plumbaginifolia*:
THE EFFECT OF INTERSPECIFIC INTERACTIONS**

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ABSTRACT

The research presented here was focused on the effects of interactions between *Nicotiana longiflora* and *N. plumbaginifolia* on their mating systems. First, I conducted a series of observations and pollination experiments in natural populations to determine interpopulational variability in traits associated with mating system. Second, I determined if this variability also exists in the realized mating systems (i.e. outcrossing rates) and if it is affected by sympatry. Finally, I explore the importance of post-pollination mechanisms determining offspring paternity in natural population of both *Nicotiana* species. Results showed significant interpopulational variability in *N. longiflora* floral traits but not in the selfer *N. plumbaginifolia*. Sympatry showed a negative effect on *N. longiflora* fitness and *N. plumbaginifolia* outcrossing rate. An increase in genetic diversity was detected on sympatric *N. plumbaginifolia* populations, suggesting the occurrence of hybridization with *N. plumbaginifolia* being the maternal parent.

Overall, this research strongly supports that interactions between *N. longiflora* and *N. plumbaginifolia* are occurring in sympatric natural populations at the present time. In sympatry, asymmetrical hybridization is a possibility, but a decrease in outcrossing rates in *N. plumbaginifolia* as well as strong preference for outcross pollen in *N. longiflora* might be acting as isolation mechanisms.