

Molly Dunn, Fordham University. The evolution of self-fertilization in *Brassica rapa*: a pollination trial. Mentor: Dr. Steven Franks

Abstract: *Brassica rapa* is widely considered a self-incompatible plant, but contemporary studies show an increase in self-pollinating plants, suggesting that selfing can evolve in environments that lack pollinators as a means for outcrossing. This study investigates the level of selfing in *Brassica rapa* under such conditions. To test the plant's self-compatibility, three pollination treatments (outcrossing, manual self-fertilization, and autonomous self-fertilization) were set up in climate chambers using *Brassica rapa* fast plants. Data analysis was done by collecting and weighing seedpods produced by each individual in its respective treatment. A relatively high degree of selfing was discovered in both manual and autonomous self-fertilization treatments (recording 51.6% and 29.7% seedpod production respectively), compared to 81.3% of cross-pollinated individuals that produced seedpods. The effect of pollination treatment on seed mass per individual approached significance ($p=0.057$); however, the study successfully revealed a level of self-compatibility that will lead to further development of the project to select for selfing in *Brassica rapa*.