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"Won't you be my neighbor?" An analysis of the effect of density on floral and nectar traits in *Nicotiana glauca*

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It has been shown that heritable, genetic variability can change in response to different environmental conditions (Hoffmann and Merila 1999) and also that some plants can sense proximate neighbors and change their growth patterns accordingly (Pierik et. al., 2003). In order to study the effects of environmental variation on the floral and nectar traits we have imposed three different density treatments (high, medium and low) in a field plot of *Nicotiana glauca*. To analyze the density effect I have investigated the genetic (VE), environmental, additive (VA) and phenotypic (VP) variances for each of the three density treatments. These variances will allow me to calculate values for the heritability (VA/VP) of nectar and floral traits in *N. glauca*. By performing a quantitative genetic analysis using a partial diallel breeding design, these quantitative variances were calculated. Genetic variance was also estimated using ISSR markers and determining the percent of bands that are shared among sibs and half sibs. Results will be shown on poster. Sources Cited: Hoffmann Ary A., and Merila, Juha. "Heritable variation and evolution under favourable and unfavourable conditions". TREE (1999) 14 (3): 96-103. Pierik, R., Visser, E.J.W., Droon, H. DE. And Voesenek, C.J. "Ethylene is required in tobacco to successfully compete with proximate neighbours. Plant, Cell and Environment (2003) 26: 1229-1234.