Phylogenetic analysis of floral integration in Schizanthus (Solanaceae): Does pollination truly integrate corolla traits?

Pérez, F.

Arroyo, M. T.K.

Medel, R.

To assess whether floral integration patterns result from the action of pollinator selection on functionally related traits, we compared corolla integration patterns in eight Schizanthus species differing in pollination systems and in their degree of pollinator dependence across a molecular phylogeny. Integration patterns differed among species and these differences were not related to their phylogenetic relatedness. When the putative original function of some corolla traits was lost in pollinator-dependent species, the integration among nonfunctional characters and the rest of the corolla traits was disrupted. This pattern was not presented in species adapted for late autonomous selfing, which exhibited higher corolla integration than their pollinator-dependent relatives. These results suggest that corolla integration in pollinator-dependent species was shaped by pollinator-mediated selection. Decoupling of nonfunctional traits in these species may result from a relaxation of correlat