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# A test for pollinator mediated selection on floral traits in two *Iris* species

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## Abstract

The maintenance of flower colour polymorphism in natural populations is a question that has long intrigued biologists and ecologists, due to its value in studies of selection and its potential role in speciation. Indeed, as flower colour has a major contribution to pollinator attraction and thus plant reproduction, variation should be quickly eroded through pollinator-mediated selection.

Here we present data about the role of pollinators in maintaining a stable colour polymorphism in two rewardless *Iris* species, *Iris lutescens* and *Iris pumila*. Both species exhibit a remarkable flower colour polymorphism, with two dominant phenotypes (purple and yellow) for *I. lutescens*, and three phenotypes (purple, yellow and blue) for *I. pumila*. In both species, insect visitors are foraging for non-existent nectar, rather than pollen rewards.

In this talk, we will present results of two independent experiments to examine pollinator-mediated phenotypic selection considering pigment concentration as well as other relevant morphological traits. We used supplementary hand pollination to experimentally remove pollinator induced pollen limitation. Differences in relative fitness between treatments allowed us to estimate the relative role of pollinators as agents of selection while still allowing for other selective pressures on all floral traits.

While fruit production was clearly limited by pollinators in both species, the main conclusion is that there was no pollinator-mediated selection in both species, consistently with the exploitation of newly emerged and naïve individuals for pollination.

**Keywords:** biologie de la pollinisation, interaction plantes, insectes, maintien du polymorphisme

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