

Review for PeerJ

Differences in pollination success between local and foreign flower color phenotypes: a translocation experiment with *Gentiana lutea* (Gentianaceae) by Guitian et al

This is a very good write-up of a well-designed experiment that looked at the effect of color morph on floral visitors. For the most part, all is well and there are only a few changes that I can suggest to improve the manuscript.

Line 102 Change to 'Despite that certain pollinators...'

Lines 104-106 Is a little confusing to read. What are the authors trying to say? Should the sentence read ' Thus, we presume that UV light does not drive local adaptation among populations, considering neither the yellow nor the orange flower color morphs differ in both UV and visible light.'

Lines 116-127 Excellent experimental design – thought of the effect of color and of cutting and transplanting the flowers.

Line 133 Change to 'Fifteen censuses of two minutes....' [note: Shouldn't start a sentence with a number unless it is written out and numbers below ten should be spelled out.]

Line 146 Reference Obeso, 1991 is given as 1992 in ref list

Line 164 Question – how many of the 951 flower visitors were bumble bees? Be specific – the number of non-bumble bees and how many different visitors were there AT each site? It is important to have the exact numbers here even if the numbers were insignificant.

Lines 170-173 Results reporting isn't correct and what is given (data on number of visits per plant) doesn't show in Fig. 3. I suggest explaining the results that Fig. 3 demonstrates, that is the total number of visits to transplanted plants (a cumulative number) first. Then give the values as written for the number of visits per plant with the comment in brackets 'data not shown'. As well, I suggest adding information on the color morphs in the two locations. That is, the sentence could start 'In Ancares, a population of orange morphs, more visits were observed to orange than to yellow flowers (32.5versus 24.7), while in Ponton, a population consisting of yellow flowers, there was no difference in visitation between the two morphs (39.2 versus 41).' Was there any statistical tests run on this data? If not, there should be.

Line 200 Should be specific that orange flowering plants are the local morph at Ancares.

Lines 216-228 Have you considered any other differences among the bumble bee groups? What are the phenology relationships between *B. terrestris* and group 3 bumble bees? Anything about their biology that might help explain their forage behaviour? If not, no problem –

but, it is curious why their behaviour is so different. Guess I'm thinking things like colony size, reproductive behaviour, timing of colony growth, etc.

Captions for Figures and Tables: a caption should be able to stand on its own without the reader referring back to the text of the paper to find the necessary details to understand the figure/table. Thus, I suggest for all captions, adding in the location (Northern Spain) and which is the local color morph – so that the reasons for the study are apparent to the reader.

- Figure 1: Add in the location and which color morph is present there
- Figure 2: Add in location and spell out the genus (*Gentiana*)
- Figure 3: Add in the color morph for the two areas in Northern Spain otherwise it is difficult to follow. Change 'pollinators' to 'bumble bees' in the caption.
- Figure 4: Change the caption to 'Number of floral visits by different bumble bee groups. Add in the color morph for the two areas in Northern Spain.
- Tables: Change '8 pollinator groups' to 'eight bumble bee groups'. Add in the point of the study – effect of color morph of *Gentiana lutea* on visitation of bumble bees in two areas of Northern Spain. The orange colour morph was present at the Ancares site, while the yellow morph was present at Ponton.