Poll-Ole-GI SUDOE: RURAL GREEN INFRASTRUCTURES FOR THE IMPROVEMENT OF POLLINATION SERVICES

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Introduction

The Southwest region of Europe has extensive areas of **insect pollinated oilseed crops**, with sunflower having high economic value. However, pollination services have been severely reduced by **habitat destruction** and **global pollinator decline**. Recent evidence has shown that such **ecosystem service can be eventually mitigated by the implementation of natural and semi-natural green infrastructures** (GIs) in the landscape. Still, in areas dominated by sunflower crops such practice has not been properly demonstrated and implemented. Therefore, through the implementation of green infrastructures, the Poll-Ole-GI SUDOE project aims to increase pollinators' diversity and, ultimately, increase sunflower crop productivity.

Objectives

1) To analyse the **current status** of pollination services

2) To evaluate the **contribution of green infrastructures** (GIs) as natural solutions to ameliorate pollination services
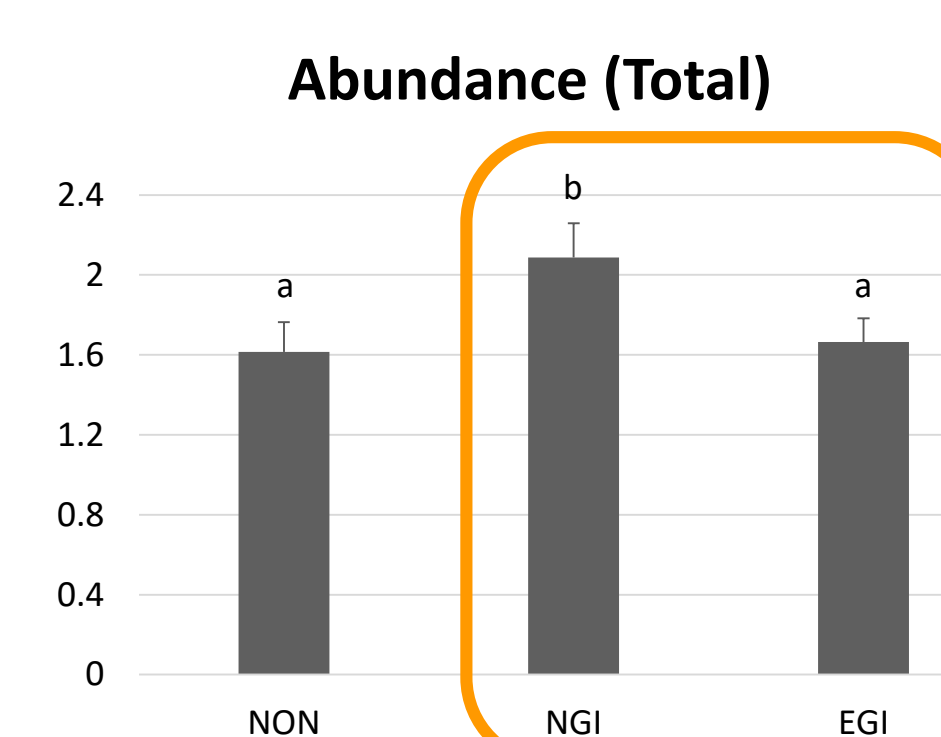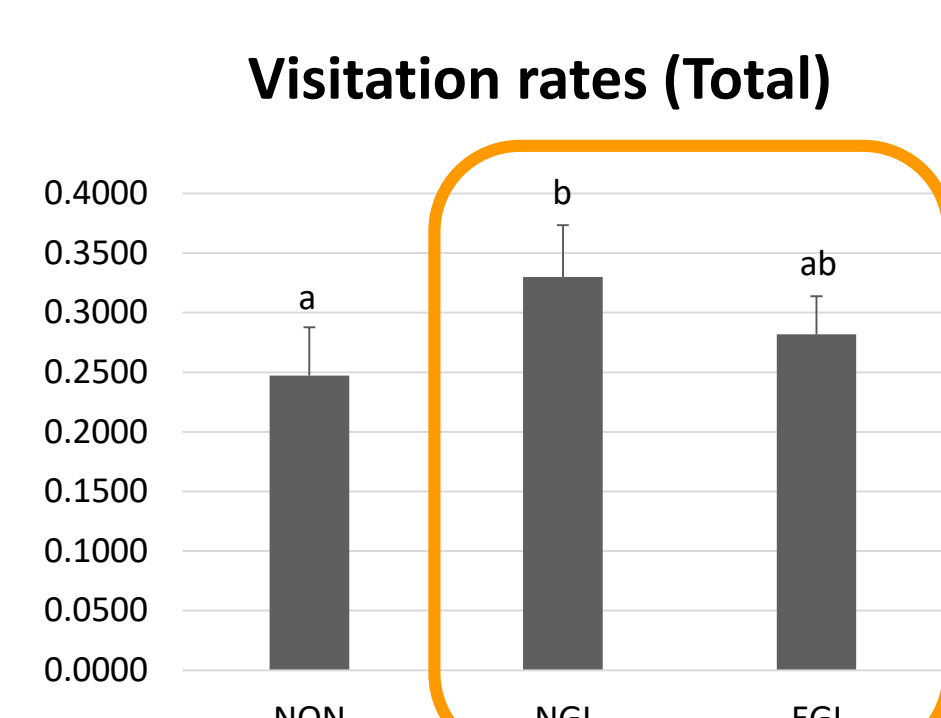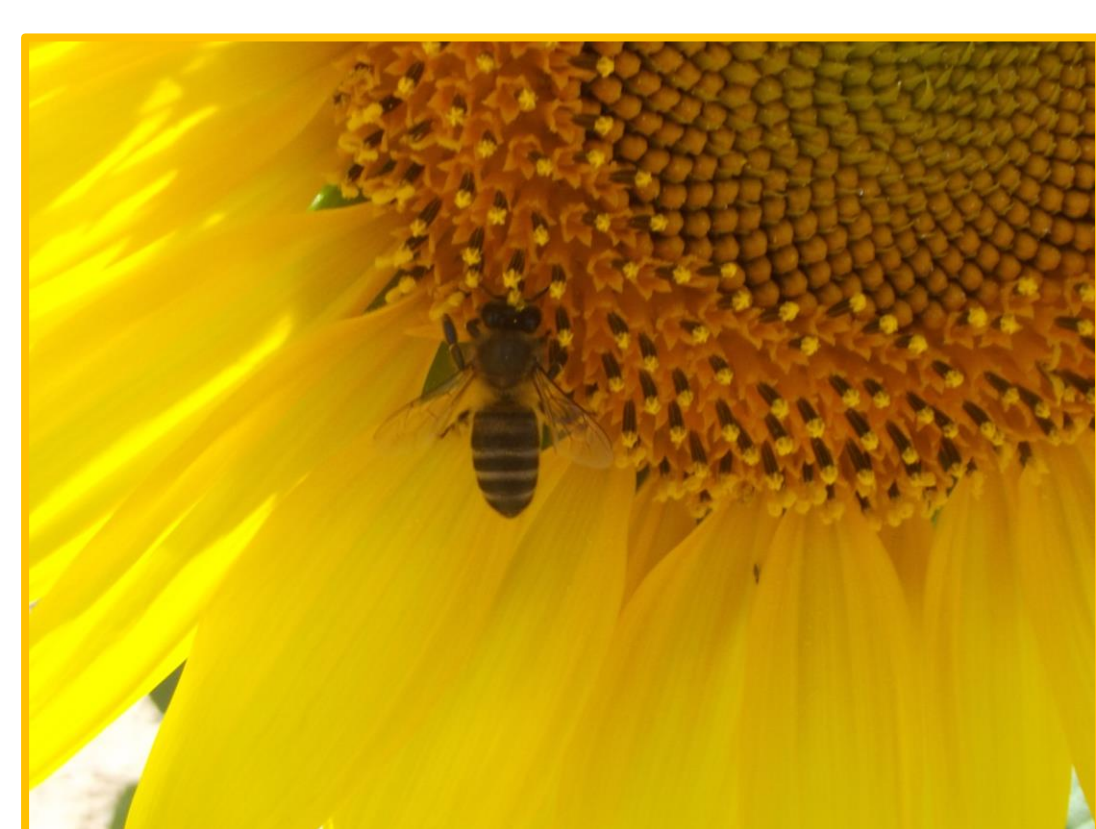
Materials & Methods

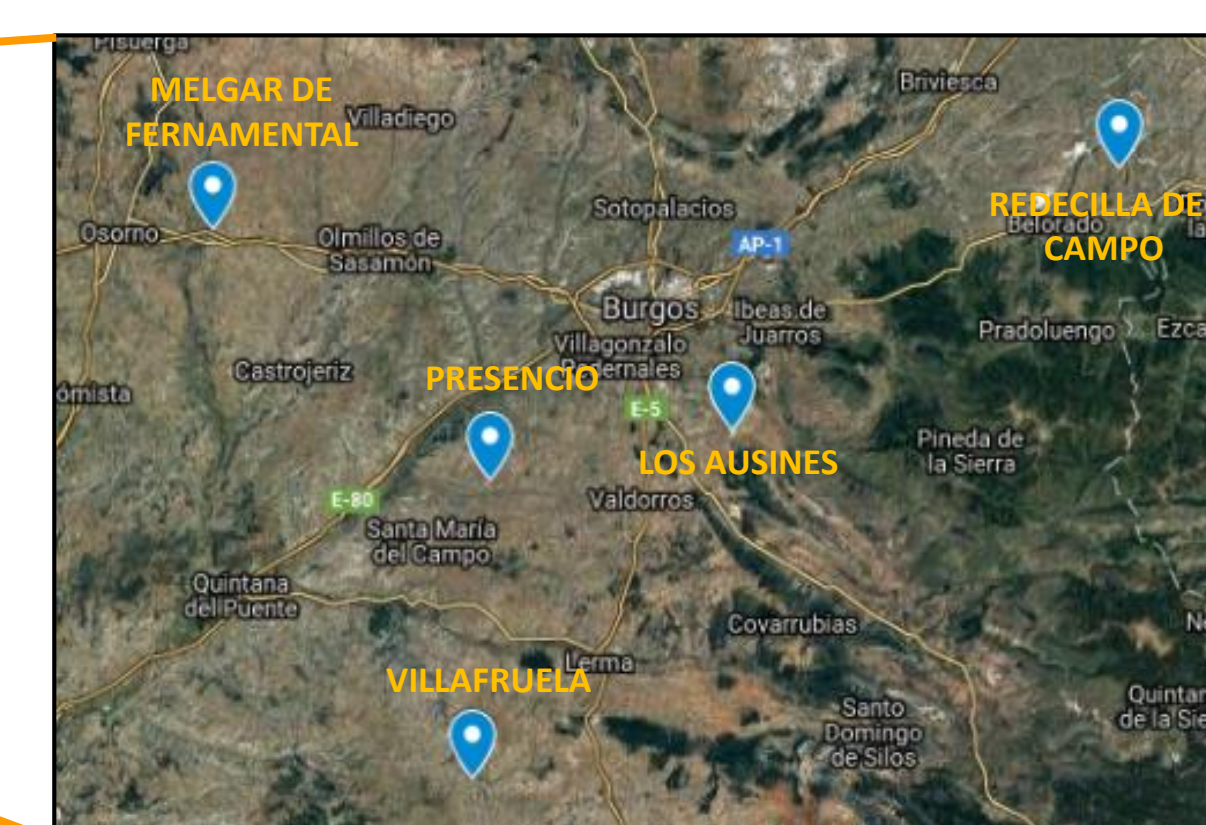Selected fields (*n* = 20)
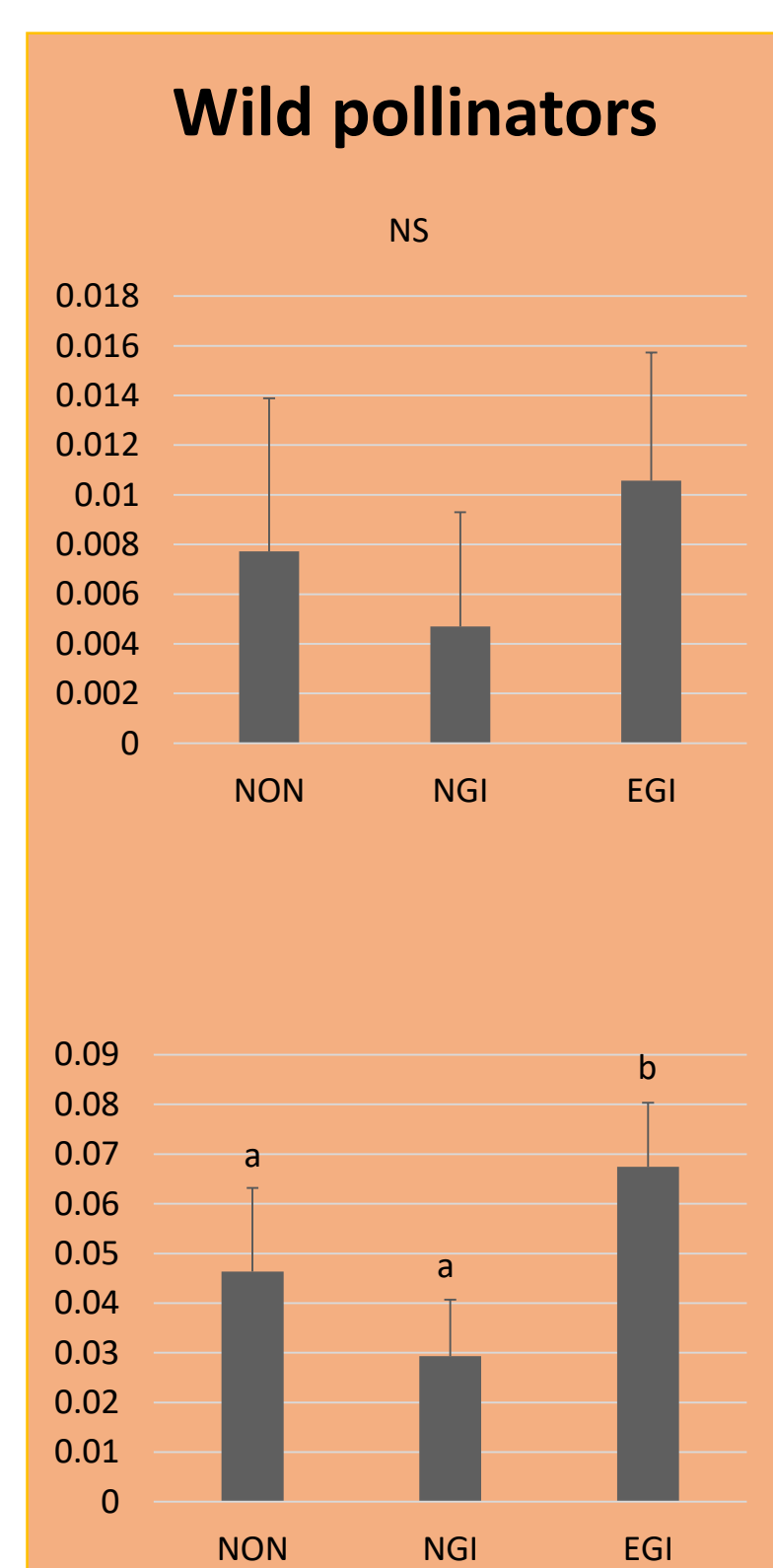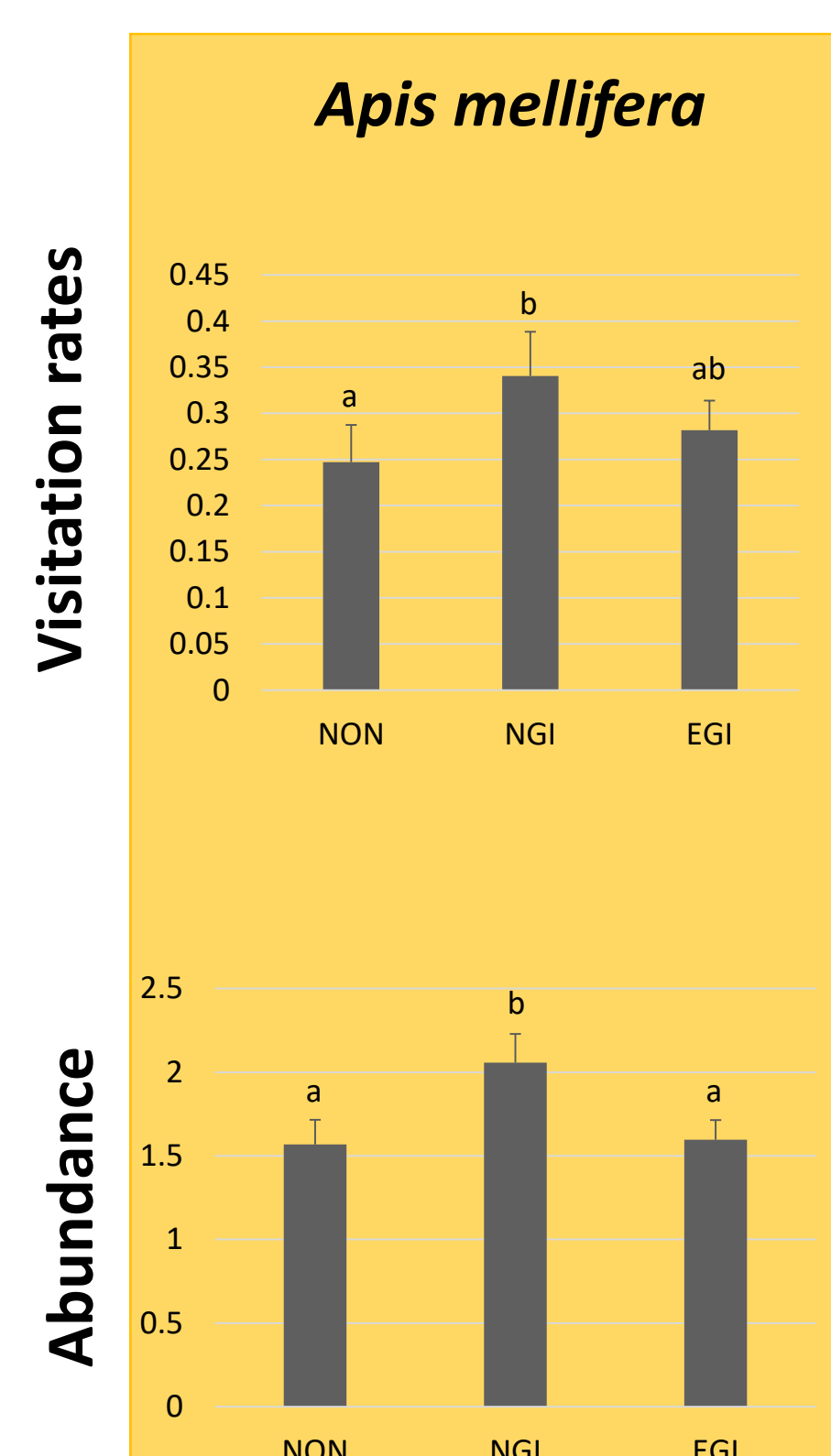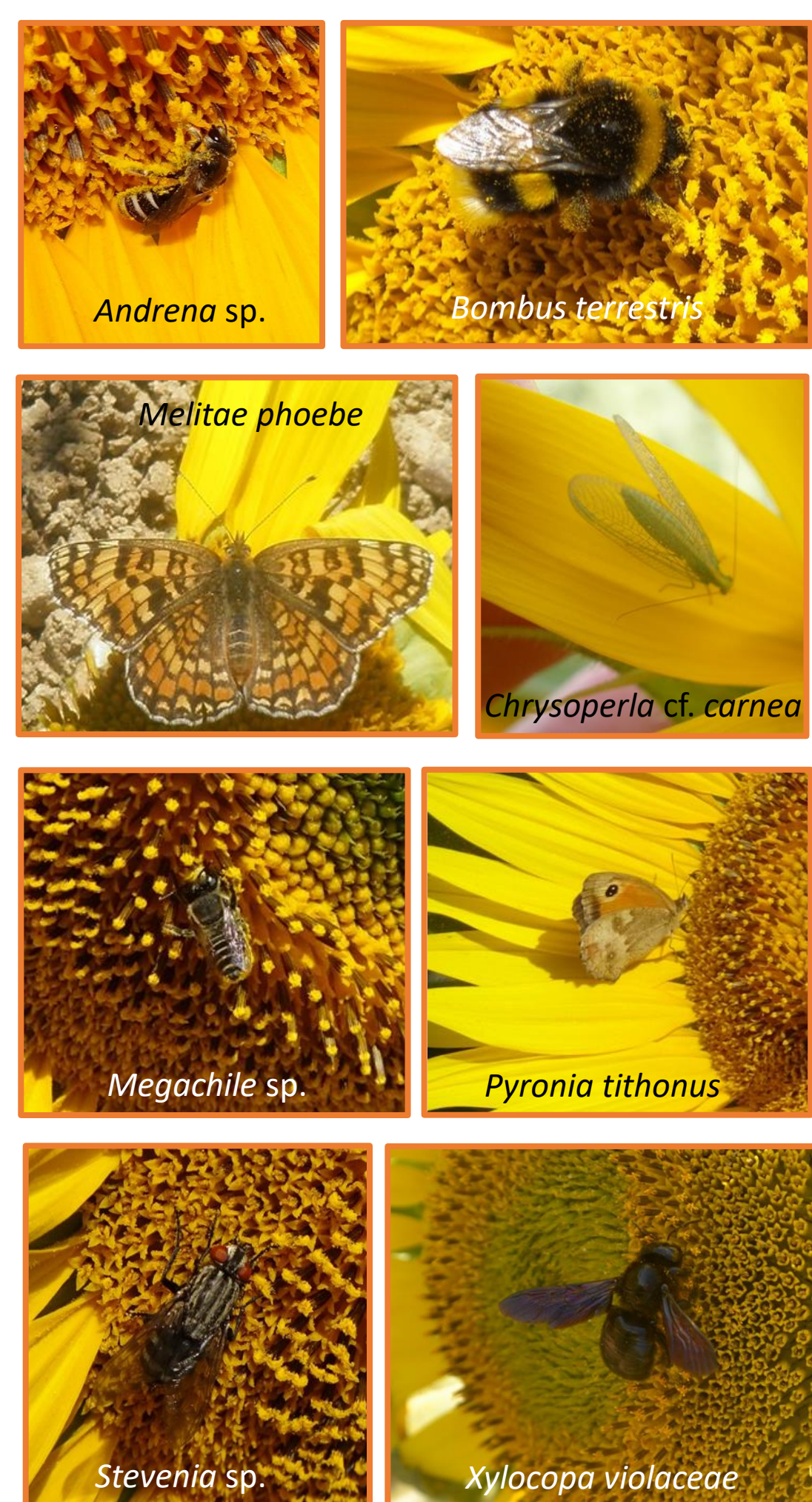→ 5 NonGI
→ 5 NGI
→ 10 EGI

July/August 2017

Pollinators censuses

> 130h of monitoring

> 1 200 sunflowers monitored
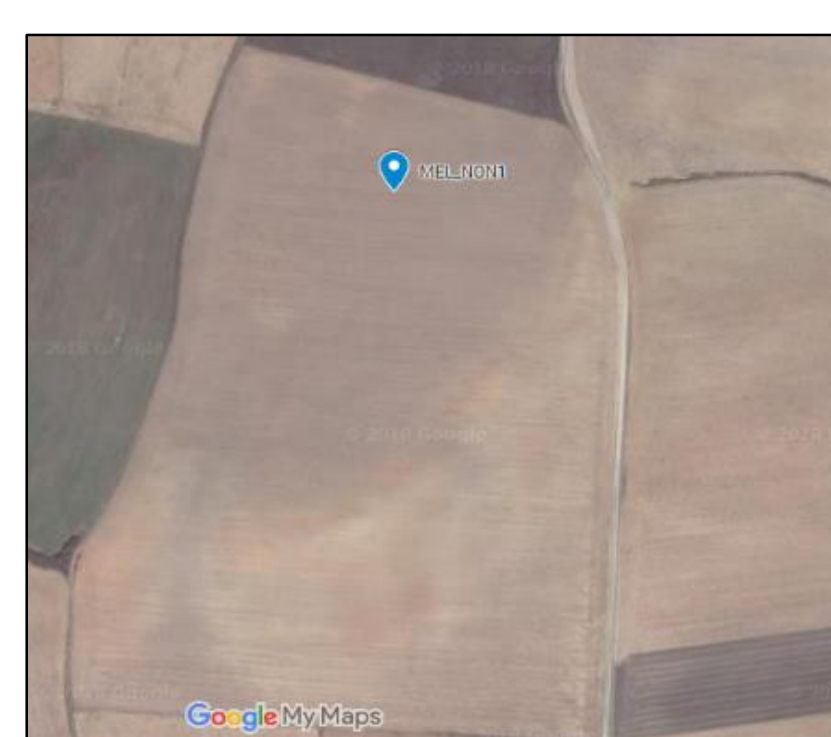
POLLINATOR OBSERVATIONS

Apis mellifera (97%)

Wild pollinators (3%)

Andrena sp.; Bombus terrestris; Melitae phoebe; Chrysoperla cf. carnea; Megachile sp.; Pyronia tithonus; Stevenia sp.; Xylocopa violaceae

Visitation rates (Total)

Abundance (Total)

Apis mellifera

Wild pollinators

Visitation rates

Abundance

BURGOS
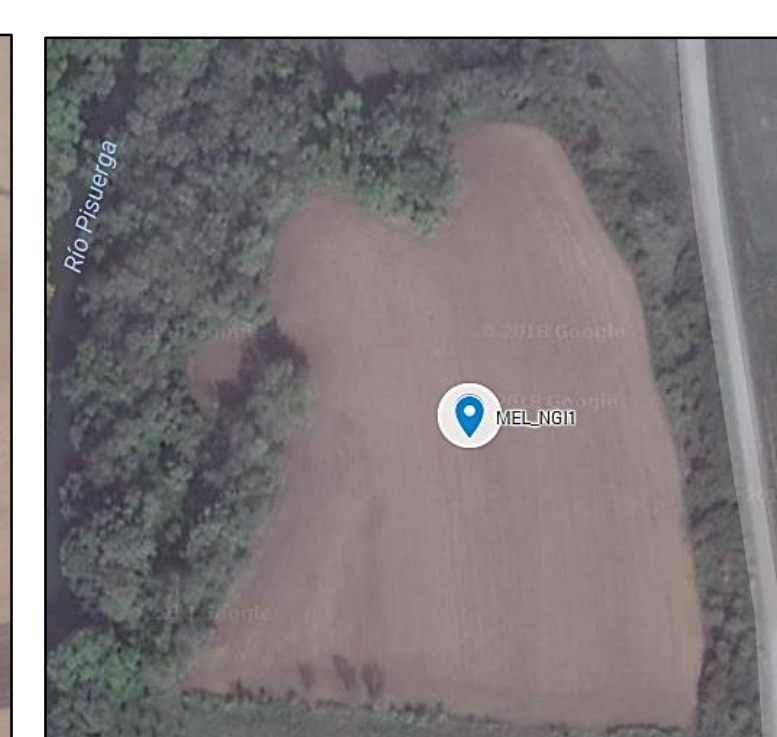
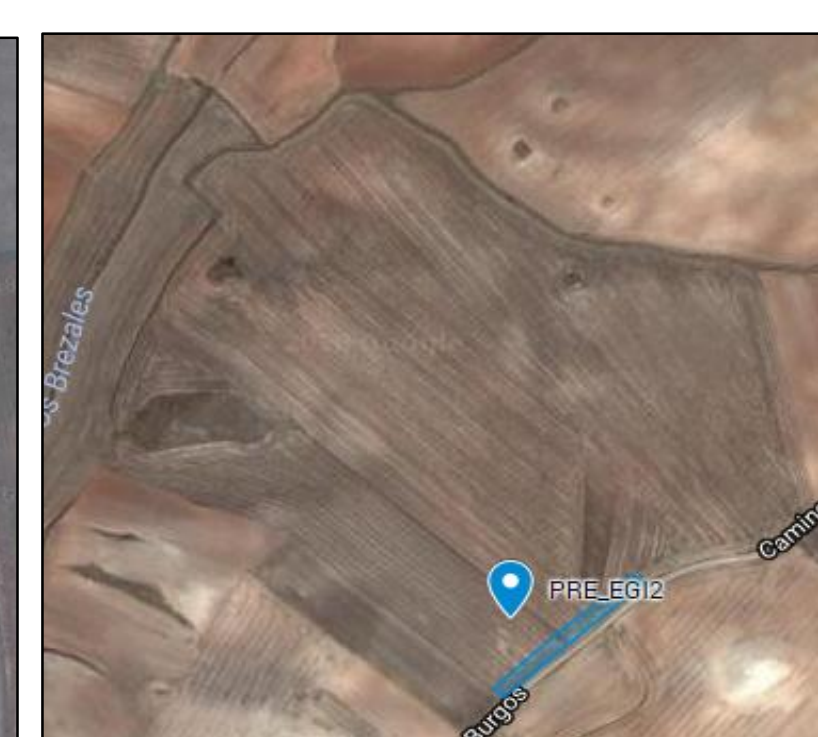In each study site:

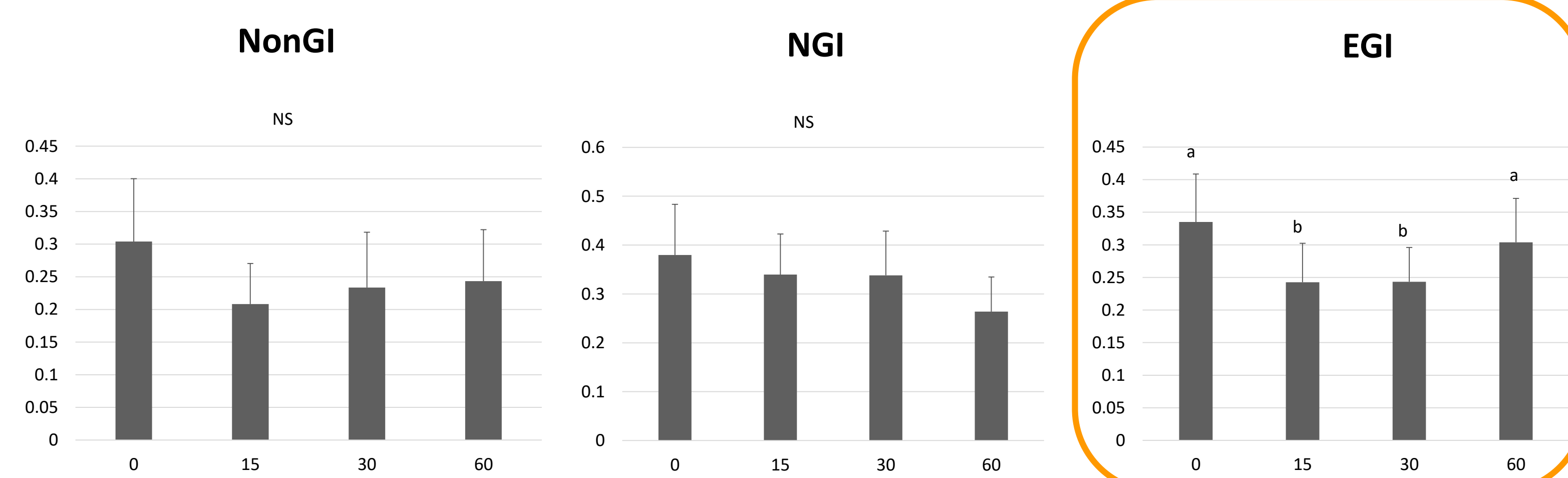Without GI – NonGI (x1)   Natural GI – NGI (x1)   Implemented GI – EGI (x2)

VISITATION RATES WITHIN THE FIELDS

NonGI   NGI   EGI

Discussion & Conclusion

- As expected, the visitation rates and the abundance of pollinators **were higher in fields with GIs**, including both NGI and EGI, being *Apis mellifera* **the most abundant pollinator**;
- The honey bees' visitation rates showed the same pattern of the total visits, due to the **high proportion** of these pollinators;
- The **abundance of wild pollinators was higher in EGI fields**, even though with very few visits;
- It was observed a **decreasing of visitation rates with the increased distance** to the GIs (although the pattern was not very clear);
- The results are from the first year of the installation of the EGIs; therefore, their effect could not be as stronger as expected. At this moment, the results of the second year of the project are being processed.