

## THE ROLE OF URBAN AGRICULTURE ON BIOLOGICAL DIVERSITY IN MARGINAL AREAS

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### INTRODUCTION

**Urban agriculture** is the production of food (plants/tree crops and livestock) within an urban area, including commercial, community/private gardens or pastures.

Although urban agriculture is often cited as promoting biodiversity in urban areas, the extent of empirical evidence for such claims remains overlooked.

#### AIM

To understand wheatear urban farming increases biodiversity compared to vacant lots

#### Urban farm

A green space of variable size owned by the municipality which management is entrusted for a defined period to individual citizens or associations

#### WHERE

The study area of this project is the urban farms in the municipality of Rome.

We sampled insects in

- 4 urban farms
- 4 control areas (grassland areas at low management)

#### WHEN

We sampled ground insects during summer of 2023.

Specifically, we placed the pitfall traps at the beginning of June and collected them every 20 days until October, for a total of 6 samplings.

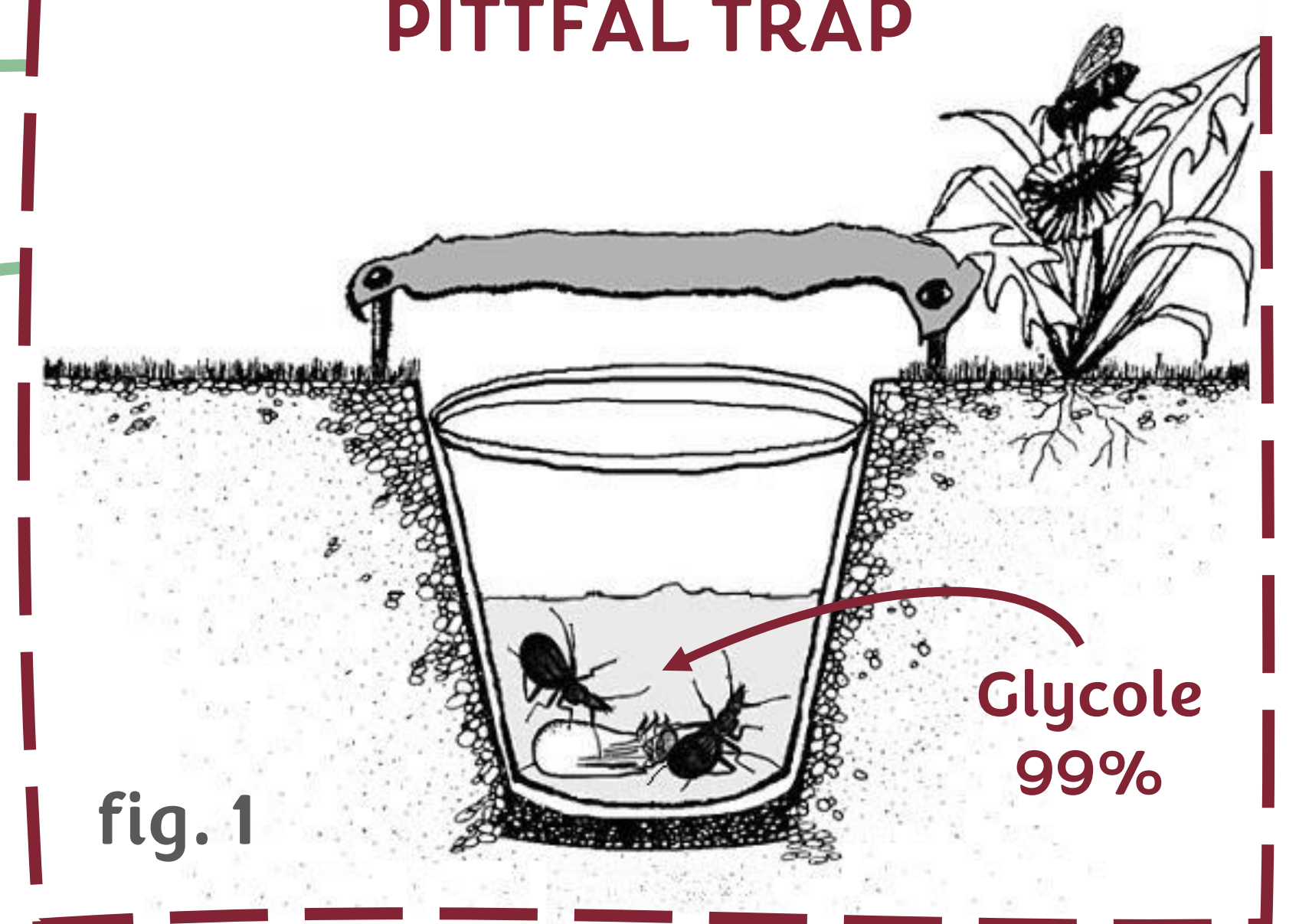
#### HOW

At the center of each site, we installed 3 pitfall traps (fig. 1) to collect walking insects.

We focused the study on 8 orders: Blattodea, Coleoptera, Dermaptera, Embioptera, Heteroptera, Hymenoptera (Formicidae), Ortoptera, Omoptera.

- **Shannon index** for each site in each month using the number of individuals for each order.
- **Linear model** using Shannon index as dependent variable and *habitat type* (urban farm/control area), *month* and their interaction as independent variables.
- **Post-hoc test** to identify differences in diversity.

#### PITFAL TRAP



### RESULTS

**Insect diversity** is influenced by the *habitat type* and by *month-type* interaction, while the *month* alone has no effect on it.

Comparing urban farms and control areas each month (fig. 2), we can notice a visible reduction of insect diversity in control areas as the season progresses, reaching a significant difference in September ( $P = 0.0021$ ). This phenomenon can be explained through the hypothesis that **urban farms can act as a refuge for entomofauna**.

#### CONCLUSIONS

Urban farms maintain constant entomological diversity, positively influencing the environment, offering shelters to insects as the breeding season progresses, while shelters in the surrounding areas disappear progressively.

fig. 2

#### Diversity trend

