



Patterns of Natural Egg Parasitism by *Telenomus* sp. (Hymenoptera: Scelionidae) on Stink Bug Pests in Argentine Rice Fields

Daniela Fuentes^{1*}, Andrea Toledo¹, Daniel Aquino² & Gimena Dellapé²

¹ Plant Pathology Research Center *E-mail: dana.dafr@gmail.com. ² Division of Entomology, La Plata Museum. National Scientific and Technical Research Council (CONICET). National University of La Plata, Buenos Aires, Argentina.

INTRODUCTION & AIM

- Parasitoid wasps are highly effective biological control agents, capable of parasitizing eggs, larvae, and adults of various insect species. They often act with other natural enemies, highlighting their importance in pest management strategies for crops such as rice (*Oryza sativa* L.)
- However, their effective application requires understanding of their field interactions and the influence of crop cultivars and plot heterogeneity, providing essential insights for developing sustainable practices that optimize ecological interactions in agroecosystems.
- The aim of this study was to evaluate natural egg parasitism in two economically important rice pests, *Tibraca limbativentris* Stål and *Oebalus* spp., while considering the influence of local-scale factors (plot edge vs. center) and plant architectural traits (tall vs. short cultivars) on parasitoid incidence.

METHOD

Ten rice paddies in Argentina were sampled throughout the crop cycle. Stink bug egg masses were manually collected from both plot zones (edge/center), considering two rice cultivars (tall/short plants). Eggs were placed in 250cc containers covered with voile fabric and monitored daily until either parasitoids or nymphs emerged. Taxonomic determination was performed by examining nymphal/parasitoid characters, using relevant literature.



RESULTS & DISCUSSION

In total, were obtained 1,331 eggs (Fig. 1a), mainly collected during the crop reproductive phenology. Overall, 22.84% of eggs were parasitized by *Telenomus* spp. with no differences between pest groups (Fig. 1a).

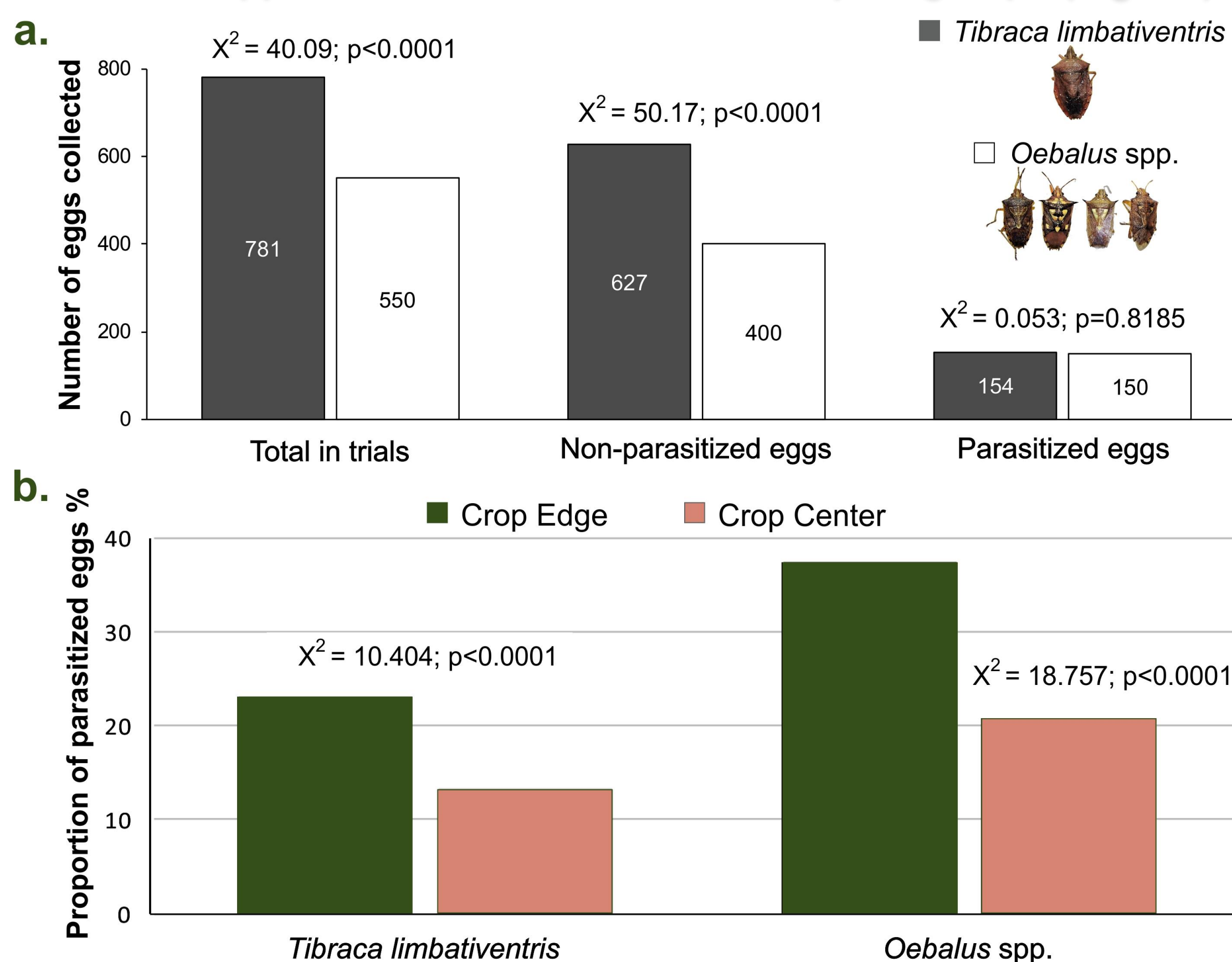


Figure 1. Results of parasitoid emergence from egg masses of *T. limbativentris* and *Oebalus* spp. a. Number of eggs in trials, parasitized and non-parasitized eggs for each pest group. b. Parasitized eggs (%) and its relationship with field zones (edge vs. center). Some values differ significantly according to Pearson's χ^2 test ($\alpha = 0.05$).

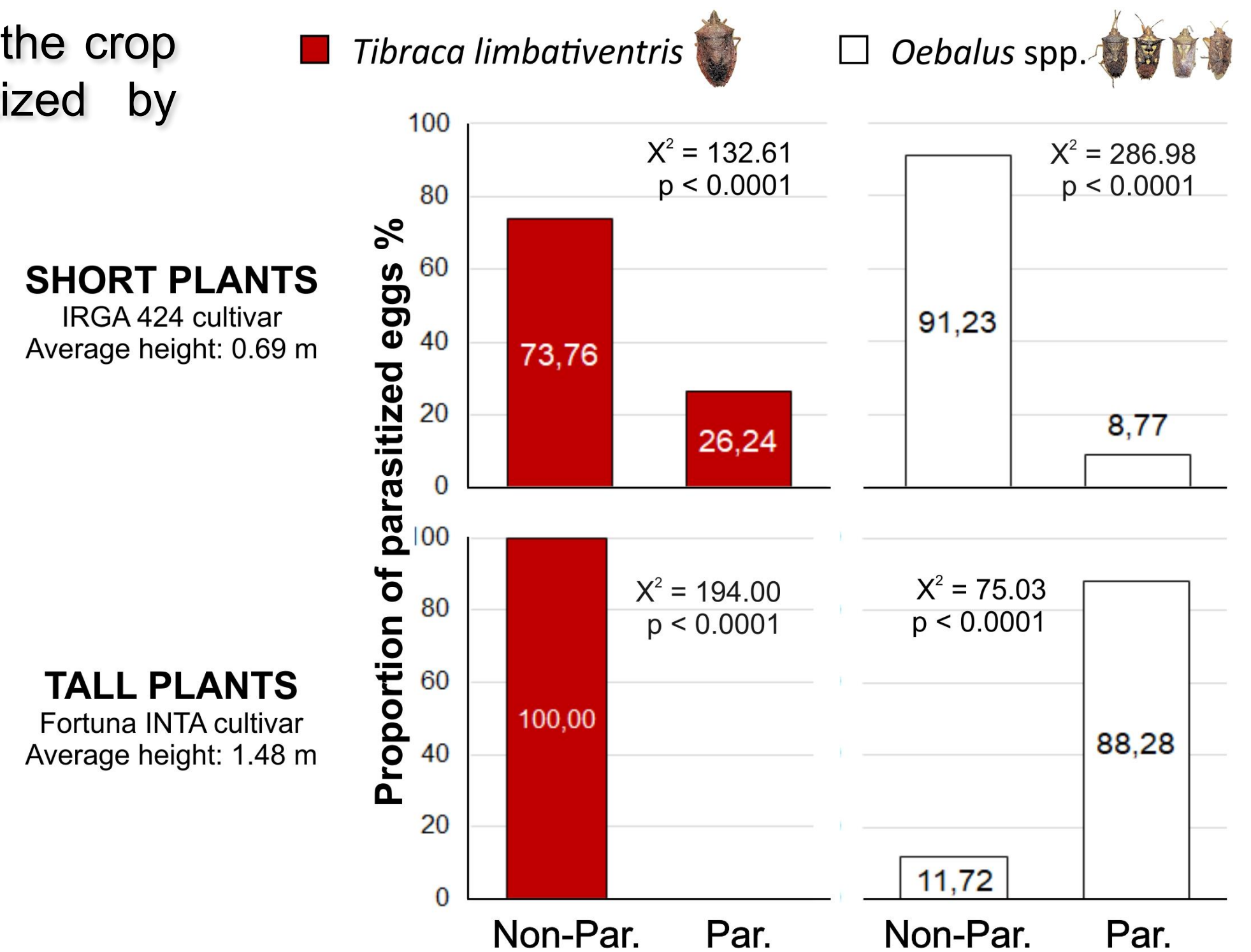


Figure 2. Relationship between parasitism and the height of rice cultivars. Values differ significantly according to Pearson's χ^2 test ($\alpha = 0.05$).

Regarding the plot zones, parasitism was consistently higher at plot edges for both pest groups (Fig. 1b). The incidence of *Telenomus* sp. also varied with rice cultivars: no parasitism of *T. limbativentris* occurred in tall cultivars, but it did occur in short ones, while parasitism of *Oebalus* was highest in tall plants and lowest in short plants (Fig. 2).

CONCLUSION

These results demonstrate that local-scale factors and plant architecture affect *Telenomus* sp. activity, and despite agrochemical use, this parasitoid remain active, contributing to pest suppression and emphasizing their agroecological importance in local crops.

FUTURE WORK

Fuentes-Rodríguez, D., Aquino, D., Dellapé, G. & Toledo A.V. (In edition). Hymenopterans in Argentine rice crops and patterns of natural egg parasitism by *Telenomus* spp. on stink bug pests.