

Artículos

## Is *Frankliniella platensis* (Thysanoptera: Thripidae) a potential pest of commercial garlic crops?

¿Es *Frankliniella platensis* (Thysanoptera: Thripidae) una plaga potencial de los cultivos comerciales de ajo?

Carlos M. DE BORBÓN  
INTA, Argentina

eborbon.carlos@inta.gob.ar

Graciela B. MENDOZA  
INTA, Argentina

Vanesa P. LUCERO  
INTA, Argentina

María José BATTAGLIA  
SENASA, Argentina

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**Abstract:** The study focuses on thrips, a common pest in garlic crops in Argentina. It investigates the possible presence of *Frankliniella platensis* De Santis in these crops, demonstrating that its establishment is unlikely. Objectives include confirming its absence in commercial garlic crops, verifying infestation in garlic varieties near infested *Tulbaghia* plants, and evaluating its reproductive capacity and oviposition preferences in different garlic cultivars. Trials were conducted in the field, greenhouse and laboratory. *Tulbaghia* was identified as a potential source of infestation of *F. platensis* for garlic crops. Although this *thrips* preferred the white garlic varieties Nieve and Unión, it does not appear to pose a significant threat to crops. Additionally, no specimens were found in bulbs or garlic cloves from the trials, or in aerial parts of plants from commercial crops.

**Keywords:** Argentina, Mendoza, Oviposition preference, Thrips, *Tulbaghia*.

**Resumen:** El estudio se centra en los trips, una plaga común en los cultivos de ajo en Argentina. Se investiga la posible presencia de *Frankliniella platensis* De Santis en estos cultivos y se demuestra que su establecimiento es improbable. Los objetivos incluyen confirmar su ausencia en cultivos de ajo comerciales, verificar la infestación de variedades de ajo cercanas a plantas de *Tulbaghia* infestadas, y evaluar su capacidad reproductiva y preferencias de oviposición en diferentes cultivares de ajo. Los ensayos se llevaron a cabo en campo, invernadero y laboratorio. Se identificó a *Tulbaghia* como una fuente potencial de infestación de *F. platensis* para cultivos de ajo. Aunque *esta especie* prefirió los cultivares blancos Nieve y Unión, no parece ser de gran riesgo para los cultivos. Además, no se encontraron especímenes en bulbos o dientes de ajo provenientes de los ensayos, o de las partes aéreas de plantas provenientes de cultivos comerciales.

**Palabras clave:** Argentina, Mendoza, Preferencia de oviposición, Trips, *Tulbaghia*.

## INTRODUCTION

In Argentina, approximately 13,000 hectares of garlic are planted annually, with the majority (90 %) situated in Mendoza province, and the remaining area distributed in San Juan, Córdoba and Buenos Aires. The commercial types are purple, red, white and early white garlic, which are grown in the following percentages: 67 % purple, 24 % red, 5.5 % white, 2.7 % early white and 0.8 % of other garlic types (IDR (Instituto de Desarrollo Rural), 2020). The international trading of Argentine garlic involves more than 30 countries; however, only Brazil, France and the USA import more than 80 % of national production (Burba, 2022).

In Argentina, the main pests affecting garlic crops are the onion thrips, *Thrips tabaci* Lindeman (Thysanoptera: Thripidae), the stem nematode, *Ditylenchus dipsaci* (Kühn) (Tylenchida: Anguinidae), and the wheat curl mite, *Aceria tulipae* (Keifer) (Acari: Eriophyidae). Garlic production in Mendoza province is mainly carried out by small and medium independent producers who inadequately use pesticides (Burba, 2022).

*Frankliniella platensis* De Santis has recently been reported in garlic plants (de Borbón, 2018). This species was described by De Santis in 1966 from specimens collected in false garlic flowers, *Nothoscordum gracile* (Dryand ex Aiton) Stearn (Asparagales: Amaryllidaceae) (De Santis, 1966). There were no more reports of this species until 1996, when it was found in flowers of three-cornered leek, *Allium triquetrum* L. (Asparagales: Amaryllidaceae) (Carrizo, 1996). Additionally, in 2012, it was recorded in Brazil from specimens collected in pitfall traps (Cavalleri & Mound, 2012). *Frankliniella platensis* was not reported to cause damage to commercial garlic crops; however, it may pose a potential threat to various bulb species. This insect became relevant when it was intercepted in 2015 in the Netherlands on *Tulbaghia violacea* Harv. (Asparagales: Amaryllidaceae) bulbs from Brazil (National Plant Protection Organization, the Netherlands, 2015). Subsequently, this insect was found in Mendoza, Argentina, infesting this host in the agroecological orchard of the Agricultural Experiment Station (EEA) Mendoza, INTA (de Borbón, 2018).

*Thrips tabaci* is commonly found causing damage to garlic plants in Argentina. Both larvae and adults of this species typically inhabit the base of the sheathed leaves and the inner part of young leaves near the central rib (Zamar et al., 2007). They primarily undergo pupation and diapause in the soil, making them difficult to observe, especially in the early months of cultivation. However, this thrips poses a threat to production only when the attack occurs very early.

Like other insects, thrips locate their host plants using visual and olfactory cues such as color, shape, size and plant-associated volatiles

(Frey et al., 1994; Mainali & Lim, 2010; Pobożniak et al., 2021; van Tolet et al., 2020). Studies have evaluated the oviposition preference of *Thrips tabaci* for different potato cultivar colors (Westmore et al., 2019). Additionally, positive correlations have been observed between concentrations of reducing sugars and *T. tabaci* abundance, while negative relationships have been noted between the total phenolic content and *T. tabaci* damage in various onion cultivars (Pobożniak et al., 2022). The architecture of onion plants also influences thrips abundance, with the abundance of *T. tabaci* being correlated to the number of leaves and the angle of leaf insertion (Loges et al., 2004).

While extensive knowledge exists regarding various aspects of the biology of *T. tabaci*, our understanding of *F. platensis* remains limited. Only a few hosts are documented, and there is a complete absence of information regarding its biological cycle.

We hypothesize that *F. platensis* is unlikely to establish itself in commercial garlic crops. Although *Tulbaghia* plants may act as a source of infestation on garlic and affect different cultivars to varying degrees. In the absence of this source of infestation, it is anticipated that *F. platensis* will not be able to survive on garlic cloves or establish itself on commercial garlic crops.

The objectives of this study were to (1) verify the absence of *F. platensis* in some commercial garlic crops, (2) confirm natural infestation on select garlic cultivars located close to *Tulbaghia* plants infested with *F. platensis* and to compare with *T. tabaci* infestation, (3) assess the absence of *F. platensis* in bulbs and cloves after harvest, (4) evaluate the reproductive capacity of *F. platensis* in plants of different cultivars under controlled confinement conditions, and (5) determine the oviposition preferences of *F. platensis* between six different garlic cultivars and two other Amaryllidaceae species in bioassays.

## MATERIALS AND METHODS

### Sampling of *Frankliniella platensis* in Commercial Crops of Argentina

Samples of garlic leaves were collected from various commercial crops in three provinces of Argentina during the season 2022 (Table I). The entire aerial part of three randomly selected plants was harvested from each crop and placed in polyethylene bags. In the laboratory, thrips were extracted by washing the plant material in a plastic container filled with water and a few drops of low-foam detergent. The thrips were then separated using a 100-micron sieve and transferred to vials containing 70 % ethanol for counting and identification. Identification was performed under a stereomicroscope by comparison with previously identified material

and keys (Cavalleri & Mound, 2012; de Borbón, 2009; de Borbón & Zamar, 2018), as well as with Holotype and Paratypes.

## Field trials

### *Survey of Thrips tabaci and Frankliniella platensis on Different Cultivars*

The garlic plot comprising five blocks each containing six cultivars (purple commercial type - Morado INTA, early white commercial type - Killa, white commercial types - Nieve and Unión, and red commercial types - Gran Fuego and Rubí) was planted on 11 April 2019, in the agroecological orchard of the EEA Mendoza, INTA (33°00'11"S, 68°51'50"W). The plot design followed a completely randomized block layout, oriented perpendicular to the source of infestation. This source was a pre-existing hedge of *T. violacea* plants naturally infested with *F. platensis*, located one meter from the first block with block 1 being closest to the infestation source and block 5 being the furthest. Within each one-meter-long subplot, ten garlic cloves were planted. These subplots were arranged in five completely randomized blocks, each separated by 30 cm and containing all six cultivars.

On June 24 and September 9, three plants per plot were randomly selected for each date, their leaves were collected and placed in polyethylene bags. In the laboratory, thrips were collected by washing and identified as described earlier. Plants were harvested on December 5, 2019. After drying, they were evaluated under a stereomicroscope to detect the presence of immature (larvae, prepupae, and pupae) or adult thrips in the bulbs and garlic cloves.

## Greenhouse and laboratory test

### *Potted plants*

Garlic cloves of each cultivar were individually planted in plastic pots with a square base measuring 7 x 7 cm<sup>2</sup> and a height of 10 cm. The pots were filled with a substrate consisting of peat and perlite in a ratio of 2 to 1. Plants were watered alternately with a 500ppm solution of Hakaphos® Red or plain water. The pots were placed in insect-proof cages within a greenhouse at the EEA Mendoza, INTA.

### *Source of Frankliniella platensis*

Specimens of *Frankliniella platensis* were collected from naturally infested *T. violacea* plants, which were free from insecticides, in the agroecological orchard of the EEA Mendoza, INTA. Thrips were collected by shaking the plants over a white tray and the live thrips were then collected in Eppendorf-type tubes. Each thrips specimen

was identified as described previously, sexed and its form (wingless or winged) was determined using a stereomicroscope.

### ***Frankliniellaplatensis* Breeding on Garlic Cultivars in Cage Assay**

A cage measuring 61 cm in length, 48 cm in width and 50 cm in height was used. Cotton fabric was affixed to the larger sides, while 200  $\mu\text{m}$  thick polyethylene was attached to the other two sides. An iron frame covered with 200  $\mu\text{m}$  thick polyethylene served as a lid. Within the cage, a tray measuring 45 x 55  $\text{cm}^2$  was placed, containing potted garlic plants ranging from 3 to 10 cm in height. The six varieties tested in the field were represented with five pots randomly arranged, each containing one plant per cultivar.

An Eppendorf tube containing three female specimens of *F. platensis* was positioned in each plant pot, with the tubes being opened upon placement. After 42 days of exposure between the thrips and the plants, the leaves were harvested and all thrips were extracted using the previously described washing method. Subsequently, the garlic plants were left to sprout again. Two months later, the shoots were examined for the presence of thrips.

### **Leaf Disk Oviposition Preference Test**

Two circular blotting sheets with a diameter of 90 mm were placed in a Petri dish, as well as one sheet containing six equidistant perforations of 10 mm in diameter, while the other remained unperforated. The non-perforated sheet was positioned at the bottom of the Petri dish, with the perforated sheet placed on top. Each perforation held a leaf disk and the bottom sheet was moistened with 2 ml of distilled water.

Leaf disks measuring 10 mm in diameter were cut from all six garlic cultivars and randomly placed one by one onto the perforations. Each Petri dish (arena) was marked to individualize the position of each disk. In the center of each dish, 10 wingless females were released and the dish was covered with transparent kitchen film. A total of 15 replicates were performed, with the disks and thrips left undisturbed for 40 hours.

An additional choice trial was conducted using 10 Petri dishes, each containing three disks with a diameter of 10 mm from *T. violacea*, *Agapanthus* sp. (Asparagales: Amaryllidaceae) and *Allium sativum* cv. Morado, placed equidistantly. Five *F. platensis* females were released per Petri dish.

The number of eggs laid on each disk was determined. For egg counting, each leaf disk was individually placed in vials, and acid fuchsine solution was added, followed by incubation for 20 hours. Subsequently, the disks were transferred to a fixative solution (Backus et al., 1988; Cockfield et al., 2007) and left for at least 24 hours. The

eggs were then counted under a stereomicroscope with transmitted light, and with the disks placed on a Petri dish and pressed with an object holder. To identify *F. platensis* egg shape and size, some disks were mounted between a slide and coverslip and measured under a light microscope at 400x magnification.

### Statistical Analysis

The statistical analyses were conducted using the InfoStat statistics software (Di Rienzo et al., 2013). All data were analyzed using Generalized Linear Models (GLM) with the negative binomial family function and log function link. Thrips recovered from garlic plants in the field assay were categorized by species and evaluation date. In the field trial, the total number of *F. platensis* and *T. tabaci* thrips were analyzed separately. Fixed effects included the treatment's cultivars, blocks (distance from infestation source), dates and the interactions between date-cultivar and date-block. Random effects were not considered. For the analysis of egg deposition on leaf discs and breeding in cage assays, the fixed effect corresponded to cultivars, and the evaluated variables were the number of eggs placed and the total number of thrips recovered from garlic plant leaves in each cultivar, respectively. The averages of all treatments were compared using the Least Significant Difference (LSD) analysis.

**Table I.**

**Number of garlic leaf samples (from three plants) collected from various commercial crops in different regions of Argentina.**

Province	Department	Locality	Number of samples
Buenos Aires	Patagones	Carmen de Patagones	1
Buenos Aires	Patagones	Juan Padere	1
Buenos Aires	Villarino	Mayor Buratovich	2
Buenos Aires	Villarino	Ombucta	2
Mendoza	San Carlos	San Carlos	1
Mendoza	Luján de Cuyo	Pedriel	1
Mendoza	Lavalle	San Francisco	1
Mendoza	Maipú	Lunlunta	1
San Juan	Pocito	Carpintería	1
TOTAL			11

## RESULTS

Table II summarizes the goodness-of-fit measures for statistical models, categorized by trial type and thrips species. All results from the Generalized Linear Models (GLMs) were significant, with the exception of the date-block interaction for *T. tabaci* (Table III).

**Table II**

Goodness-of-fit measures for statistical models, categorized by trial type and thrips species.

Trial	Species	Model fit measurements				
		N	AIC	BIC	logLik	Deviance
Field	<i>F. plat.</i>	60	409.31	453.29	-183.65	60.18
Field	<i>T. tab.</i>	60	494.98	538.96	-226.49	61.15
Greenhouse	<i>F. plat.</i>	26	226.44	235.24	-106.22	28.69
Lab	<i>F. plat.</i>	90	384.33	401.83	-185.16	95.32

**Notes** N= number of replicates, AIC= Akaike Information Criterion, BIC= Bayesian Information Criterion, logLik= Log-Likelihood

### Sampling of *Frankliniella platensis* in Commercial Crops of Argentina

A total of 148 thrips individuals were collected from 11 samples taken from garlic-producing areas of Argentina. No adults or larvae of *F. platensis* were found. Of the thrips collected, 90 % were identified as *Thrips tabaci* adults, while the remaining 10 % belonged to the following species: *Frankliniella occidentalis* (Pergande), *Frankliniella* sp., and *Limothrips cerealium* (Haliday). All larvae found were identified as *T. tabaci*.

**Table III**  
Output of Generalize Lineal Model (GLM), categorized by trial, thrips species, and fixed effects

Trial	Species		Deviance	Resid. Df	Resid. Dev	Pr(>Chi)
Field assay	<i>F. plat.</i>	NULL		59	274.58	
		Date	26.31	58	248.27	<0.0001
		Block	51.12	54	197.15	<0.0001
		Cultivar	70.39	49	126.76	<0.0001
		Date:Block	18.48	45	108.28	0.001
		Date:Cultivar	48.09	40	60.18	<0.0001
	<i>T. tab.</i>	NULL		59	1143.59	
		Date	949.03	58	194.56	<0.0001
		Block	7.84	54	186.72	0.0976
		Cultivar	70.27	49	116.44	<0.0001
		Date:Block	2.65	45	113.79	0.6178
		Date:Cultivar	52.64	40	61.15	<0.0001
Greenhouse assay	<i>F. plat.</i>	NULL		25	43.73	
		Cultivar	15.04	20	28.69	0.0102
Lab assay	<i>F. plat.</i>	NULL		89	139.42	
		Cultivar	44.1	84	95.32	<0.0001

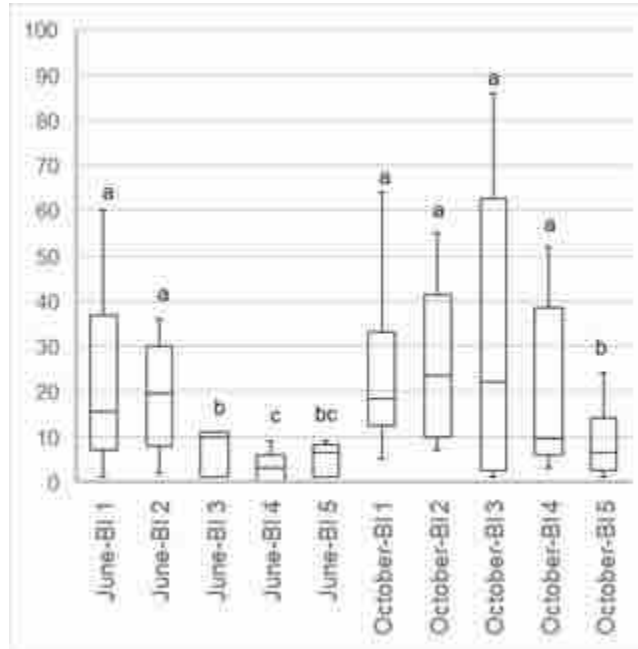
*Notes* Null Deviance, Residual Degrees of Freedom, Residual Deviance, and p-value ( $\chi^2$ )

### Field trials

#### *Survey of Thrips tabaci and Frankliniella platensis on different cultivars.*

The box plot in Figure 1 illustrates the date-block interaction for *F. platensis*. A clear gradient of infestation is depicted, extending from the *Tulbaghia*-infested plant with *F. platensis* to the garlic crop in the field. The two closest blocks showed significantly higher levels of infestation compared to the other three blocks during the June sampling. However, in the October sampling, the first four blocks exhibited no significant differences amongst themselves when compared to the initial two blocks from the earlier date, but their overall levels were significantly lower. Conversely, no significant interaction between date and block was found for *T. tabaci*.

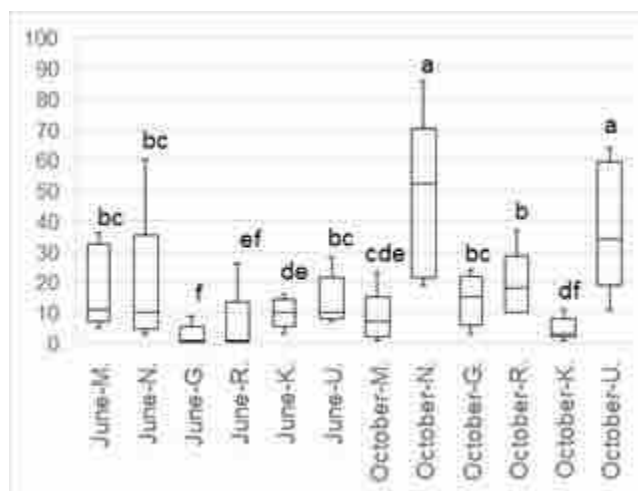
Figures 2 and 3 show date - cultivar interactions for *F. platensis* and *T. tabaci* respectively. Significant differences in infestation were observed between cultivars for the two dates in both thrips species. While in *T. tabaci* there was a great and significant increase in the October sampling for the six cultivars (Fig. 3), in *F. platensis* only white commercial garlic cultivars Nieve and Union significantly increased the infestation levels in the second sampling date (Fig. 2).



**Figure 1**

Box plot showing the interaction between date and block for *Frankliniella platensis* infestation level determined by GLM analysis

Shared letters denote the absence of significant differences in the field assays



**Figure 2**

Box plot showing the interaction between the two dates and the six cultivars for *Frankliniella platensis* infestation level based on GLM analysis

Bars sharing the same letter do not differ significantly (LSD test,  $p < 0.05$ )

No thrips were observed in garlic bulbs either during harvest or after being dried and examined under a stereomicroscope

### Greenhouse and laboratory tests

#### *Cage Frankliniella platensis Breeding Preference Assay*

*Frankliniella platensis* was reared successfully on all cultivars tested. Various stages of the insect were found on these plants, including larvae, prepupae, pupae and adults. The GLM parameters and results are shown in Table II and III. Comparisons between cultivars by LSD analysis are presented in Table IV. The cultivar Nieve was the most preferred, not differing significantly from the cultivars Unión and Killa, but differing from the other three cultivars. Gran Fuego, Morado and Killa did not differ from each other, and Rubí was the least preferred, only differing from Nieve and Unión

No thrips were found on the re-sprouted garlic plants

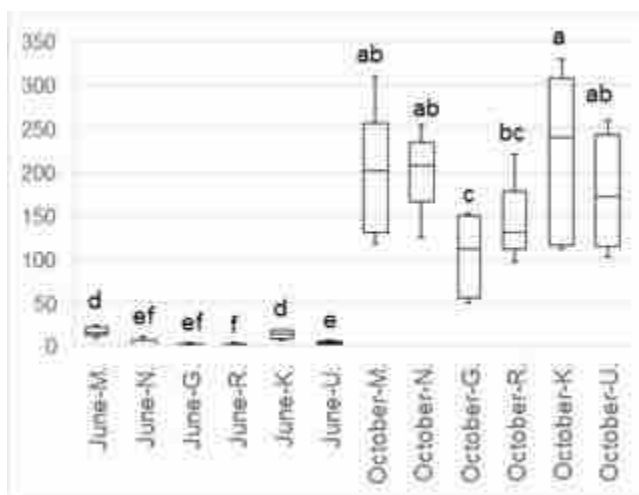


Figure 3

Box plot showing the interaction between the two dates and the six cultivars for *Thrips tabaci* infestation level based on GLM analysis

Bars sharing the same letter do not differ significantly (LSD test,  $p < 0.05$ )

**Table IV**  
**Comparison of thrips abundance per cultivar after 42 days of confinement in a cage trial inside a greenhouse**

Cultivar	<i>Frankliniella platensis</i>		
	Mean	SE	Letters
Nieve	55.75	18.25	a
Unión	33.8	10.03	ab
Killa	28.8	8.6	abc
Morado	21.2	6.42	bc
Gran Fuego	14.2	4.4	bc
Rubí	8.5	4.37	c

Mean abundance (+/- SE) of *Frankliniella platensis* by garlic cultivar (Gran Fuego, Killa, Morado, Nieve, Rubí, and Unión). Means with the same letters do not differ significantly (LSD test, p <0.05)

***Leaf Disk Thrips Oviposition Preference Test***

The GLM results indicate significant differences with a probability of less than 0.0001 and 5 degrees of freedom (Table III). Comparisons between cultivars by LSD analysis are illustrated in Table V. The cultivar Killa was the most preferred for oviposition, not differing significantly from the cultivar Morado but differing from the other four cultivars. Nieve and Unión were the least preferred for oviposition, differing significantly from Morado, Gran Fuego and Killa.

In the choice test between Amaryllidaceae species, eggs were placed only on *Tulbaghia* leaf disks, except for a single egg inserted on a garlic leaf disk.

**Table V.**  
**Oviposition bioassay. Mean (+/- SE) of fit percentage of inserted eggs of *Frankliniella platensis* per garlic cultivar (Gran Fuego, Killa, Morado, Nieve, Rubí, and Unión)**

Cultivar	<i>Frankliniella platensis</i>		
	Mean	SE	Letters
Killa	0.4	0.16	a
Morado	0.21	0.12	ab
Gran Fuego	0.19	0.11	ab
Rubí	0.12	0.09	ab
Nieve	0.06	0.06	b
Unión	0.03	0.05	b

Means with the same letters do not differ significantly (LSD test, p <0.05)

## DISCUSSION

*Frankliniella platensis* was not detected in the sampled commercial garlic crops in Argentina. This thrips species was only observed on garlic plants located near *Tulbaghia violacea*-infested hedge in an agroecological garden.

There is limited data available concerning the biology of *Frankliniella platensis*. While some host plants are known, information about its breeding capabilities within these hosts is lacking. This study contributes to increasing our current knowledge about this thrips species.

Despite the presence of an infestation source of *F. platensis* near the garlic crop, a low number of individuals of the species was found on plants (Fig. 2). In contrast, *Thrips tabaci* populations were lower in the early stages of the crops but increased later in the season, particularly in spring (Fig. 3). The occasional presence of *F. platensis* on garlic in Mendoza, Argentina, as reported previously, could be attributed solely to the proximity of garlic plants to *Tulbaghia* plants infested with this thrips. Although *F. platensis* can complete its life cycle on garlic, its establishment in commercial crops is considered unlikely.

Most *F. platensis* specimens are wingless, with only a few found to be winged. Wind may play a significant role in facilitating the non-selective arrival of wingless specimens to garlic plants. Therefore, differences observed between cultivars could be attributed to intrinsic characteristics of the cultivars affecting breeding. This distinguishes *F. platensis* from *T. tabaci*, as all adults of the latter species are winged, allowing for more selective host choices.

In the case of *F. platensis*, the first two blocks closest to the infestation source exhibited significantly higher infestation levels than the remaining blocks (Fig. 1). However, on the second sampling date carried out during spring, no differences were observed between the first four blocks. This suggests a gradual spread of *F. platensis* to more distant blocks.

In this study, no specimens of *F. platensis* were found in garlic bulbs or individual cloves after harvest. This suggests that *F. platensis* is unlikely to affect the garlic trade, contrasting with what has been observed with *Tulbaghia* plants. Notably, *F. platensis* was intercepted in the Netherlands on *Tulbaghia* bulbs imported from Brazil (National Plant Protection Organization, the Netherlands, 2015), highlighting the need for implementing control measures related to *Tulbaghia* trade in Argentina.

Rearing *F. platensis* in cages showed that this species can develop on garlic plants, reaching the prepupal and pupal stages in the leaves. Similar observations have been made in both garlic and *Tulbaghia* plants in the field. This adaptation to perennial plants with linear

leaves may provide a refuge for the pupal stage in the leaf insertion zone throughout the year. No thrips were found on re-sprouted garlic plants in the cage assay, likely because there were no pupae buried in the pots and all present thrips were removed when the leaves were cut. In contrast, *T. tabaci*, being a polyphagous species, primarily pupates in the soil (Deligeorgidis & Ipsilandis, 2004).

There is no evidence to suggest that *F. platensis* is present in commercial garlic crops. In these crops, leaves senesce almost simultaneously, bulbs are harvested annually and new cloves are replanted. Consequently, there are no plants left during the summer, potentially eliminating alternative hosts for *F. platensis*. Although it is unknown if this thrips buries as pupae in the soil, it is possible that all stages are eliminated with the harvest of garlic plants. Furthermore, *F. platensis* is adapted to certain perennial Amaryllidaceae such as *Tulbaghia violaceae*. In these plants, the leaves do not senesce simultaneously, whereas the opposite occurs in garlic.

The white garlic cultivars, Nieve and Unión consistently exhibited the highest preference for breeding by *F. platensis* in both field and cage trials. Conversely, in the oviposition bioassays, early white and purple cultivars were the most preferred. Various hypotheses could be proposed to explain why the oviposition bioassays contrast with field and greenhouse trials.

The leaf disk method for evaluating oviposition preference may not accurately reflect thrips breeding in the field as suggested by the results of the assays, which did not align with those of crop and cage trials. One possible explanation is that the number of inserted eggs depends on the physiological conditions of the leaves. For example, younger cucumber leaves are preferred for oviposition by *Frankliniella occidentalis* over older ones (de Kogel et al., 1997). A plant grown in a pot in a greenhouse may not accurately represent field conditions.

The relationship between plant architecture and thrip densities has been studied in onions, where closer leaf insertion angles and a greater number of leaves correlate with higher *Thrips tabaci* densities (Loges et al., 2004). It is possible that *Frankliniella platensis* prefers garlic plants with an architecture similar to its primary host, *Tulbaghia*.

The different results in field trials, greenhouse cage assays and bioassays, may be attributed to the influence of various variables such as plant architecture, the physiological state of the plants -specifically of the leaf discs- and thrips migration, among others. Moreover, these assays address different questions. In bioassays, conditions are more controlled and only the preference of cultivars for *F. platensis* to lay eggs on leaf discs produced in the greenhouse can be evaluated. Conversely, cage breeding trials assess preference and development in whole plants under greenhouse conditions. Finally, field trials examine the behavior of cultivars under actual field cultivation conditions.

## CONCLUSIONS

*Frankliniella platensis* was not detected in commercial garlic crops during the sampling period. This thrips preferred the white cultivars Nieve and Unión, in field trials. *Frankliniella platensis* showed significantly lower breeding rates compared to *Thrips tabaci*, except on those cultivars. Furthermore, *F. platensis* was not found in garlic bulbs or cloves after harvest. The preference for these white cultivars was further confirmed in cage trials conducted in the greenhouse. In leaf disk bioassays, the cultivars Killa and Morado were the most preferred for oviposition, while *Tulbaghia* was preferred over garlic or *Agapanthus*.

Our findings suggest that *F. platensis* is unlikely to become a significant pest of garlic, although *Tulbaghia* plants may serve as a source of infestation for garlic crops by this thrips species.

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## Notas de autor

[deborbon.carlos@inta.gob.ar](mailto:deborbon.carlos@inta.gob.ar)

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