

Secondary Hosts as Potential Inoculum Source for Rice Blast Pathogen in Argentina.



Pedraza, M. V.; Liberman, C.A., Nuñez Bordoy, E., Asselborn, M.N.

Experimental Station of Concepción del Uruguay INTA, Entre Ríos, Argentina. Ruta Prov. 39, km 143,5. Tel. +54 03442 438075. CC Nº 6 - C.P. 3260. pedraza.virginia@inta.gob.ar

NATIONAL INSTITUTE OF AGRICULTURAL TECHNOLOGY



INTRODUCTION Rice Blast is the main disease of this crop in Argentina. It occurs sporadically at different rice growing areas, mainly in Santa Fe and Chaco provinces. However, when environmental conditions are favorable to disease development, Rice Blast can cause damages in other rice growing areas, such as Entre Ríos or Corrientes provinces. Inoculum survival and pathogen population specificity are important issues to understand Rice Blast epidemiology.

OBJECTIVE To evaluate the virulence of "Pyricularia grass isolates" collected from Argentine rice growing area, on rice differential lines with resistant genes (*Pi1*, *Pi2*, *Pi33* and *Pita*) and commercial varieties.

MATERIALS & METHODS

⇒ "Pyricularia" isolates collected in Entre Ríos fields, in 2007, from: *Phalaris canariensis* (Fig. 1), *Stenotaphrum secundatum* (Fig. 2), *Digitaria sanguinalis* (Fig. 3), *Lolium perenne* (Fig. 4).

⇒ Greenhouse assays (Fig. 5).

⇒ Isolates artificially inoculated to rice genotypes:

✓ differential lines with resistant genes

Pi1, *Pi2*, *Pi33* and *Pita*;

✓ commercial varieties:

Cambá INTA-Proarroz,

Puitá INTA-CL,^C

Supremo-13.

⇒ Re-isolations of the pathogen from foliar symptoms.

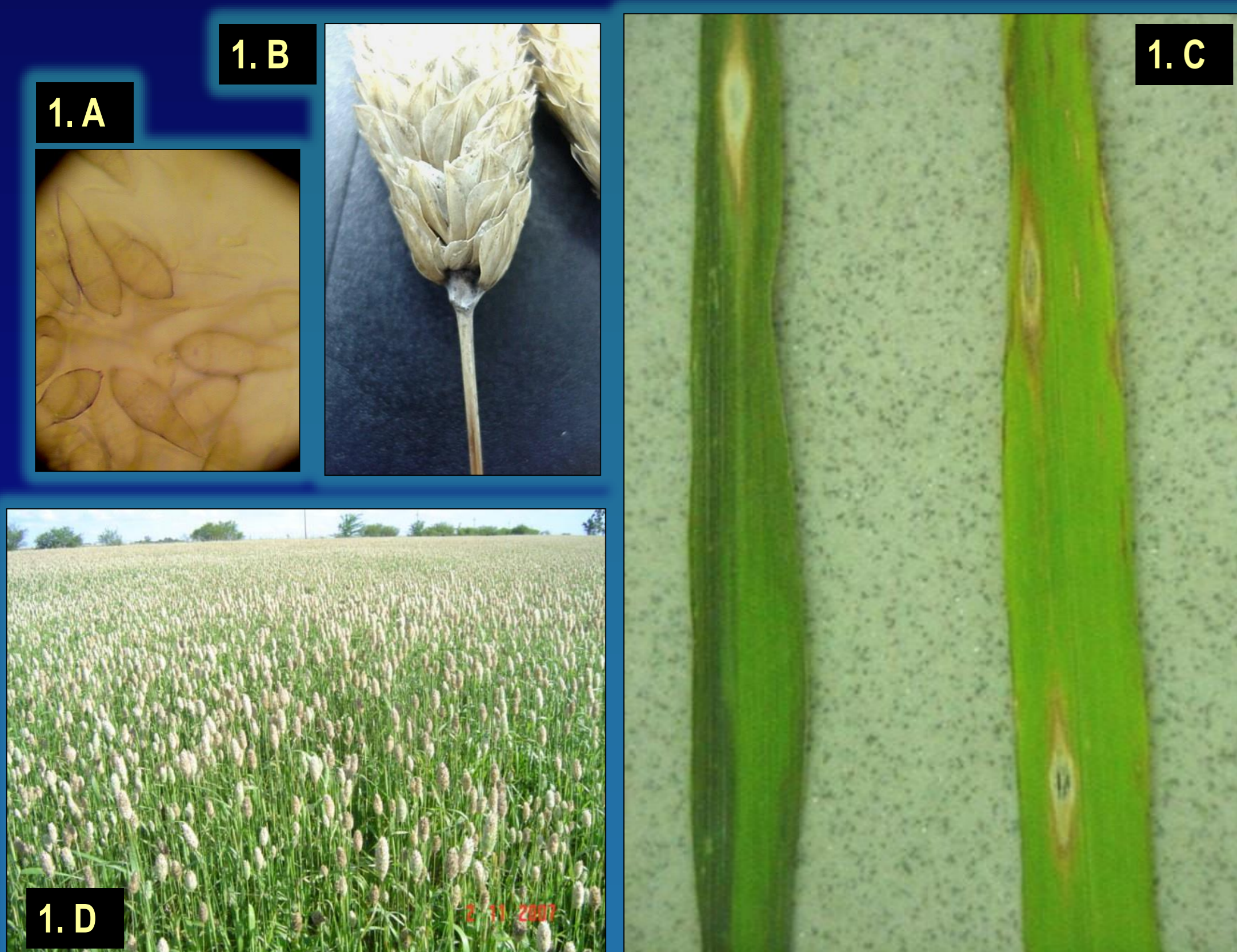


Fig. 1. "Pyricularia" in *Phalaris canariensis*. A. Conidia. B. Panicle neck symptoms. C. Foliar lesions. D. Field crop view.



Fig. 2. "Pyricularia" in *Stenotaphrum secundatum*. A. Foliar lesion. B. Field view.

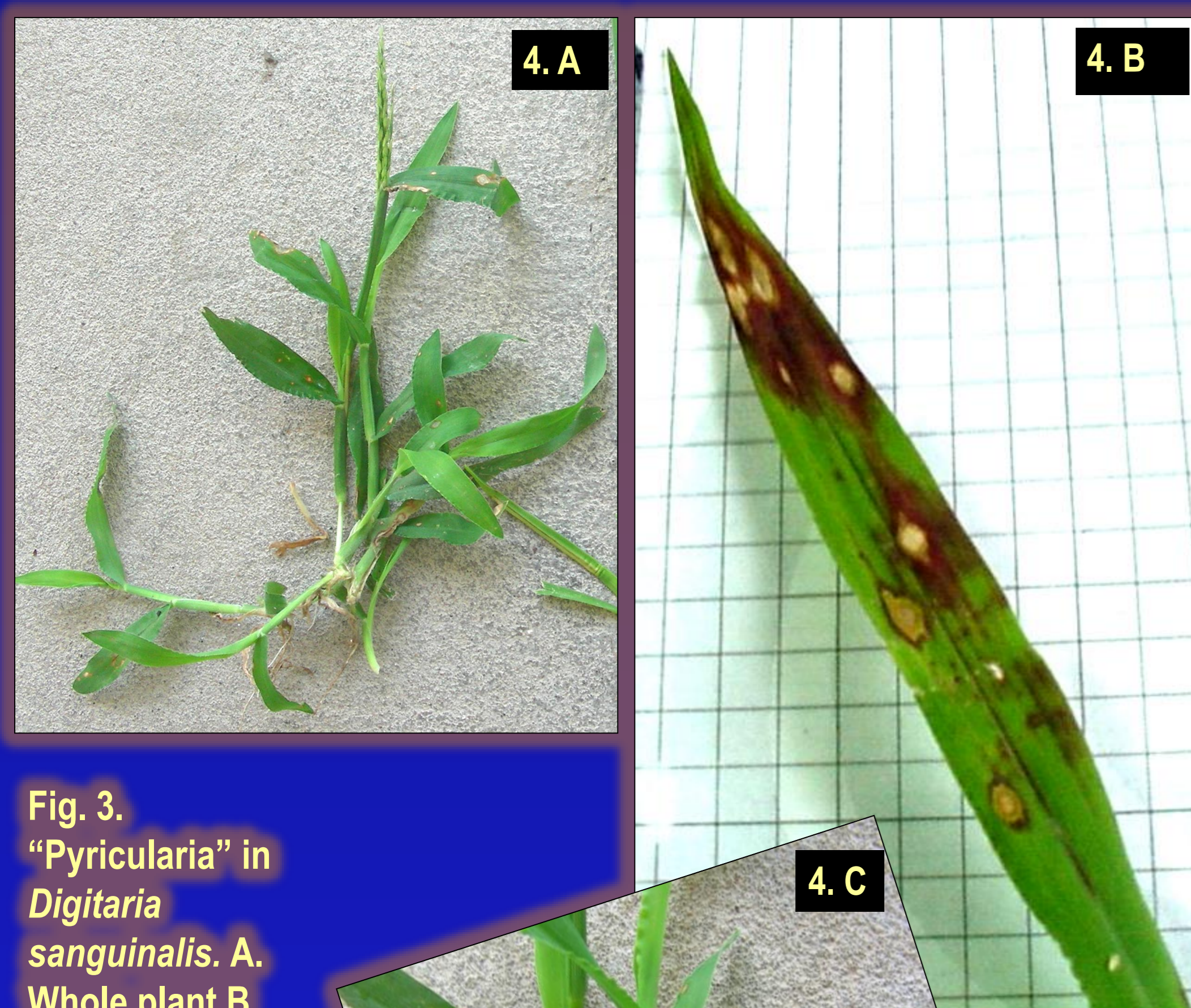


Fig. 3. "Pyricularia" in *Digitaria sanguinalis*. A. Whole plant. B and C. Foliar lesions.



Fig. 5. Greenhouse assays. One trail for each isolate x genotypes combination.

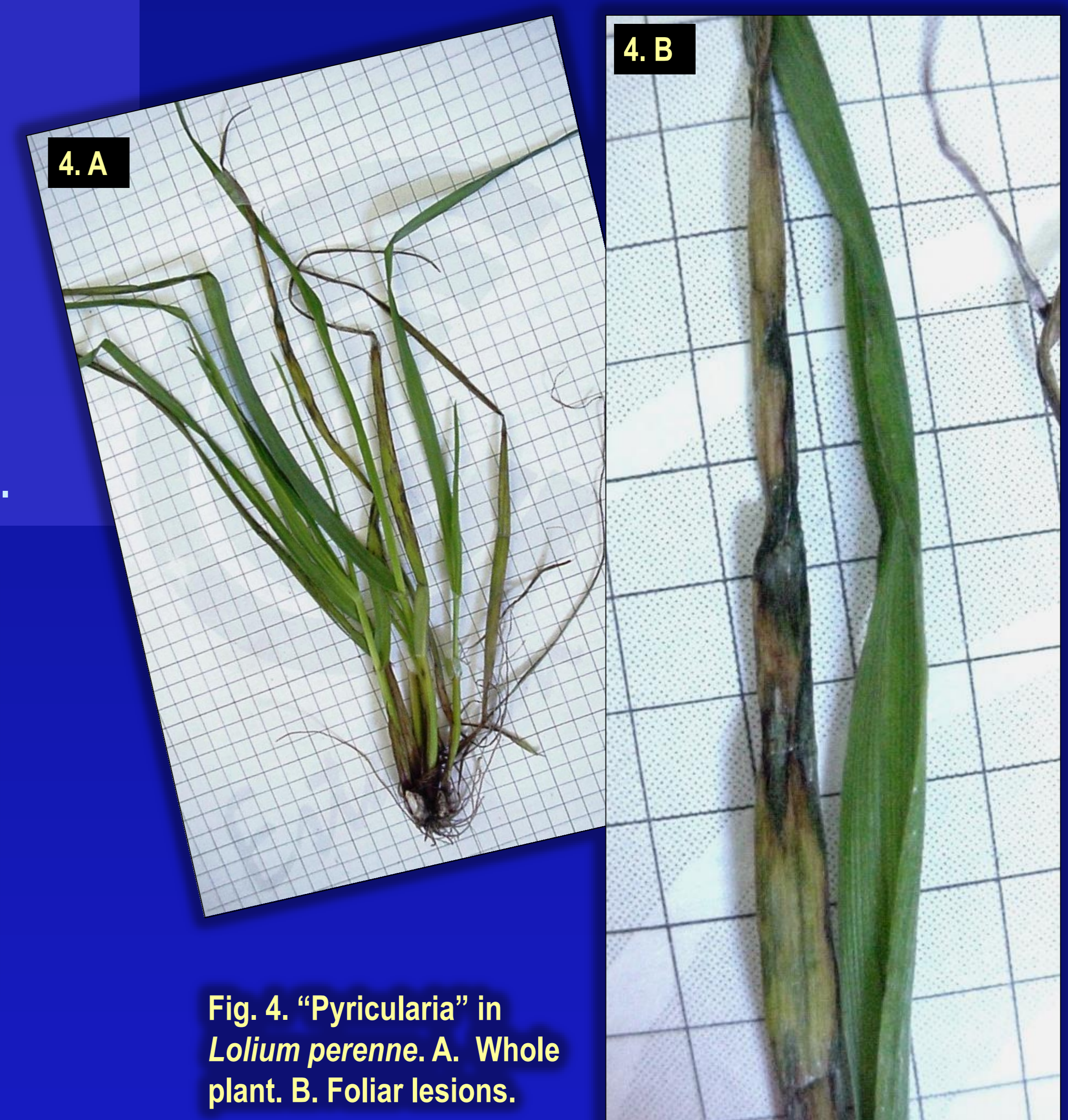


Fig. 4. "Pyricularia" in *Lolium perenne*. A. Whole plant. B. Foliar lesions.

RESULTS

- All isolates caused typical Rice Blast foliar symptoms in different rice genotypes.
- Differential line with *Pi2* showed symptoms with all the isolates evaluated.
- The other genotypes showed susceptible or no reactions, according to the isolate.
- Molecular characterization of original and re-isolated strains will be done.



Fig. 6. Rice symptoms after 12-15 days of incubation. A. Foliar lesion. B. Conidia produced on the lesion.



Fig. 7. Rice symptoms after 12-15 days of incubation. A. Foliar lesions. B. View of the whole plants.

CONCLUSIONS

This work enhances the study of secondary hosts' potential role in Rice Blast epidemiology in Argentina.