

Soybean Rust Management in Argentina

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National Project on Soybean Rust INTA (National Institute of Agricultural Technology) Argentina

Introduction

Soybean is the most important crop in Argentina accounting for a great percentage of the gross national product.

In Argentina it is estimated that between 8 and 10% of the soybean crop is lost to diseases each year.

Recently, soybean in Argentina has been threatened by soybean rust caused by *Phakopsora pachyrhizi* Syd. & Syd. Soybean rust is new to South America, having been found in Brazil, Paraguay and in the northern provinces of Argentina during 2002, subsequently spreading to all the soybean producing provinces of Argentina. (Figure 3)

The pathogen was detected not only on soybean (Figure 1) but also on Kudzu (*Pueraria lobata*) (Figure 2).

In order to minimize losses due to Soybean Rust in Argentina INTA developed, since 2002, a National Project on Soybean Rust.

Objectives

- 1- To survey soybean rust caused by *Phakopsora pachyrhizi*.
- 2- To review available information on rust around the world and in Argentina.
- 3- To develop tolerant and resistant cultivars. To identify possible sources of resistant germplasm available in Argentina. To develop resistant cultivars through the use of worldwide resistant germplasm.
- 4- To develop a soybean rust management system to reduce the disease incidence.

Material and Methods

1- Surveys for Soybean Rust detection

A - On soybean crops: Farmer plots, Field trials and National Network of Soybean Cultivar Evaluation.

B - On alternative hosts of Soybean Rust.

- 2- Workshops at different locations around the country.
- 3- Screening of naturally infected cultivars in the province of Misiones.
- 4- Fungicide field trials in several provinces of Argentina. Cultivation management trials (planting date, type of cultivars, etc.)



Fig. 1 Symptoms on soybean leaf



Fig. 2 Symptoms on Kudzu

Results

1- Surveys for soybean rust detection

A- On Soybean

2003: Soybean rust was detected only in two fields, in the northeast region (Figure 3 a)

2004: Soybean rust was detected in most of the soybean producing provinces of Argentina (Figure 3 b)

2005: Soybean rust was detected in all of the soybean producing provinces of Argentina (figure 3 c)

B- On alternative hosts of Soybean Rust

2003, 2004 and 2005: Soybean rust was detected on Kudzu, only in the province of Misiones.

2005: Soybean rust was detected on volunteer soybean plants collected in the main soybean region of Argentina during and after the winter.

- 2 - Public and private researchers and extensionists were trained on soybean rust diagnose.
- 3 - Different reaction to soybean rust were detected among the naturally infected cultivars tested in Misiones.
- 4 - Soybean rust was efficiently controlled by a group of fungicides tested in Corrientes. Early planting and cultivars of groups III and IV were less affected by soybean rust.

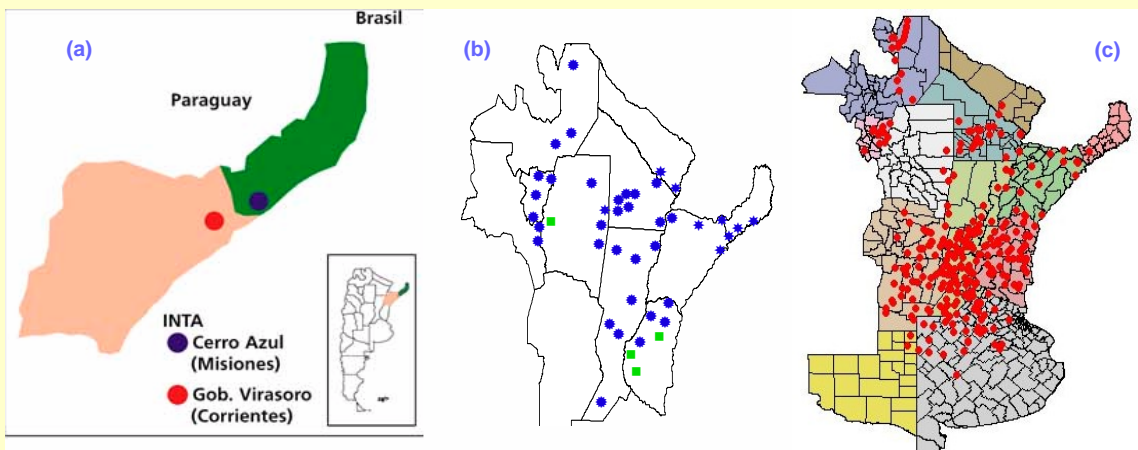


Fig. 3 Soybean Rust in Argentina during 2003 (a), 2004 (b) and 2005 (c) – Source: Sinavimo Argentina