

## Mite fauna (Acari) in soybean agroecosystem in the northwestern region of Rio Grande do Sul State, Brazil

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### Abstract

Soybeans (*Glycine max* (L.) Merrill) (Fabaceae) are the most important grain crop in Rio Grande do Sul State, Brazil. Recently, significant infestations of phytophagous mites were observed in different regions of this state. This research aimed to identify the mite fauna associated with the soybean crop grown in the northwestern region of Rio Grande do Sul, particularly in Três de Maio and Mato Queimado counties. Assessments were made fortnightly in transgenic soybeans with irrigation (L1A) and without irrigation (L2A and B), in conventional soybeans without irrigation (L3C and D), and in edge plants (L1, 2 and 3). In soybean plants, we found 18,100 mites belonging to five families, nine genera and 12 species, besides those of Oribatida. Area L1A showed higher richness and abundance, with 10 species, followed by area L2B with insecticide application, with nine species. Lower richness was observed in L2A, with five species, and L3D showed lower abundance. Phytoseiidae showed higher richness, with five species, followed by Tetranychidae, with four species. *Tetranychus urticae* Koch, *Mononychellus planki* McGregor and *Tetranychus ludeni* Zacher were the most common phytophagous mites on soybean plants. *Neoseiulus idaeus* Denmark & Muma, *Pseudopronematus* sp., *N. californicus* McGregor and *N. anonymus* Chant & Baker. *N. idaeus* were the most common predators. On edge plants, *T. ludeni* and *T. urticae* were the most abundant, while *N. idaeus* and *Agistemus riograndensis* Johann & Ferla stood out among the predatory mites.

**Key words:** Phytophagous mites, *Mononychellus planki*, *Tetranychus urticae*, predatory mites, *Neoseiulus idaeus*

### Introduction

Soybeans (*Glycine max* (L.) Merrill) (Fabaceae) originated from domesticated wild plants and improved by scientists from China, and the crop was introduced in Brazil via the United States in 1882. Nowadays, Brazil is a major world producer and Rio Grande do Sul State is the main soybean producer in the country (Embrapa/Soja 2010).

Soybean production is affected by plant health risks such as pests and diseases. Mite occurrence has been of recent concern due to crop damages, and chemical control has been required (Guedes *et al.* 2007). In Brazil, the following tetranychid mites are reported in the soybean crop: *Mononychellus planki* McGregor, *Tetranychus desertorum* Banks, *Tetranychus gigas* Pritchard & Baker,