

COMUNICAÇÕES

First report of root and stem rot of soybean caused by *Phytophthora sojae* in Mato Grosso do Sul State, Brazil

Alexandre Dinnys Roese, Augusto César Pereira Goulart

Embrapa Agropecuária Oeste. BR 163, km 253,6. Caixa Postal 449, 79804-970, Dourados, MS.

Autor para correspondência: Alexandre Dinnys Roese (alexandre.roese@embrapa.br)

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Root and stem rot caused by *Phytophthora sojae* Kaufm. & Gerd. is a widespread problem in the southern region of Brazil, affecting most areas where soybeans are grown. However, its occurrence in the central region of the country is unusual. In Brazil, this disease was first observed in Rio Grande do Sul State in 1995 (Costamilan et al. Ocorrência de *Phytophthora sojae* no Brasil. Fitopatologia Brasileira, Brasília, v. 21, n.3, p. 395, 1996). In Mato Grosso do Sul State, it was first reported in 2009 by the phytopathology team of “Embrapa Agropecuária Oeste” in Sidrolândia Municipality. In 2012, soybean plants of cultivar FT Campo Mourão RR, showing the same symptoms, were noted in Amambai region. In both cases, the disease was diagnosed in field patches of plants with characteristic symptoms at the same row (Figure 1A). The disease severity was highest at the edges of the crop fields. Root and stem rot was observed in clay and compacted soil. According to the literature, this situation predisposes plants to the disease by favoring the presence of free water in the soil, allowing thus the migration of *P. sojae* zoospores to the plant roots (Schmitthener, A. F., 1999. In: Hartman, Sinclair & Rupe. Compendium of soybean diseases, St. Paul: APS Press.). Stunted plants showing large and brown lesions advancing from the soil line up to the branches of the main stem were observed in the field (Figure 1B) with stand reduction (Figure 1A). These lesions eventually girdle the stem and kill the plants. Dead plants in the vegetative stage, due to infection by this pathogen, were also observed. Rotten and discolored roots and stems, both externally and internally (Figure 1 B,C), were noted for infected plants in the field. The pathogen was confirmed in the laboratory by using the following methodology: Plant roots were washed under running water, and pieces of thinner roots were detached, placed between two microscope slides with a drop of water and rubbed together until the separation of root tissues. These slides were observed under an optical microscope, 100X magnification, and abundant double walled zoospores of *P. sojae* were seen (Figure 1 D). This is the first report of root and stem rot of soybean caused by *Phytophthora sojae* in Mato Grosso do Sul State, Brazil.



Figure 1. Symptoms and signs of stem rot of soybean. A: stand reduction. B: external symptom in a plant. C: internal discoloration of the stem. D: *Phytophthora sojae* zoospores in the root tissue.