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FOLIAR SPRAY OF A SOURCE OF SOLUBLE SILICON TO CONTROL ASIAN SOYBEAN RUST ON SOYBEAN / Aplicação foliar de uma fonte de silício solúvel no controle da ferrugem asiática da soja. João Augusto C. Marques<sup>1</sup>, Caroline Hawerth<sup>1</sup> Carla S. Dias<sup>1</sup>, Leandro C. Silva<sup>1</sup>, Jonas A. Rios<sup>1</sup>, Rubens K. Nagata<sup>2</sup>, Fabrício A. Rodrigues<sup>1</sup>. <sup>1</sup>Viçosa Federal University, Department of Plant Pathology, Laboratory of Host-Parasite Interaction, Viçosa, Brazil / <sup>2</sup>Giro Produtos Agrícolas, Machado, Brazil. E-mail: joao.a.marques@ufv.br

Asian soybean rust (ASR), caused by *Phakopsora pachyrhizi*, is one of the most important foliar diseases affecting soybean production. This study investigated the efficiency of spraying a new source of soluble silicon on ASR development. The treatments used were: deionized water (control), fungicide (13.3% epoxiconazole + 5% pyraclostrobin; 0.5 L/ha), potassium silicate (20 g/L), soluble silicon (SSi) (1 L/ha, pH 12), SSi (1 L/ha, pH 6.5), SSi (2 L/ha, pH 12), SSi (2 L/ha, pH 12) + fungicide. Deionized water, the fungicide as well as the solutions of SSi and of SSi + fungicide were sprayed on the adaxial and abaxial leaves of each plant (20 ml per plant) until runoff. Plants at the V4 growth stage were inoculated with a suspension of urediniospores of *P. pachyrhizi* ( $1.5 \times 10^5$  urediniospores/mL) at 24 hours after spray. The ASR severity was evaluated on the first and second leaves of each plant per replication of each treatment at 8, 11, 14, 17 and 20 days after inoculation using a diagrammatic scale. The area under disease progress curve (AUDPC) for each plant per replication of each treatment was calculated using the trapezoidal integration of the ASR progress curves. The AUDPC was significantly reduced by 37, 37, 61, 28, 80 and 82%, respectively, for Potassium silicate, SSi (1 L/ha, pH 12), SSi (2 L/ha, pH 12), SSi (1 L/ha, pH 6.5), fungicide and SSi (2 L/ha, pH 12) + fungicide in comparison to the control. The AUDPC was significantly higher by 60.2, 59.7 and 84.4%, respectively, for potassium silicate, SSi (1 L/ha, pH 12) and SSi (1 L/ha, pH 6.5) in comparison to SSi (2 L/ha, pH 12). There was no significant difference among the treatments potassium silicate, SSi (1 L/ha, pH 12) and SSi (1 L/ha, pH 6.5). The spray of soybean plants with the SSi, at the rate of 2 L/ha, contributed to reduce the ASR symptoms.

**Keywords:** Alternative disease control; Biotrophic pathogen; Fungal disease

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