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Soybean cultivars evaluation to Sudden Death Syndrome caused by *Fusarium tucumaniae* in Argentina

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Soybean Sudden Death Syndrome (SDS) is caused by four species of fungi included in the Fusarium solani complex. In Argentina, F. tucumaniae is the predominant species. Use of partially resistant cultivars is the most effective practice for controlling SDS. To identify resistant cultivars it is necessary to carry out evaluations in different years or environments because of the sensitivity of symptom development to environmental factors. From the growing seasons 2010/11 to 2015/16, the response to SDS of 200 cultivars of maturity groups (MG) II to VIII included in Argentinean National Network for the Evaluation of Soybean Cultivars (RECSO), were evaluated in a field infested with F. tucumaniae in one location in Córdoba province (Argentina). Cultivars of each MG were arranged in incomplete blocks (alpha design) and were sowed in plots of 2 rows and 3 m long, with three replications. Incidence and severity (0-5 scale) of SDS foliar symptoms were assessed at R6 growth stage and the disease index (DI=incidence x severity/5) was calculated. Data of the six years were used to compare cultivars. Not all cultivars were evaluated every year; therefore, mixed model analysis for unbalanced data was performed and lsmean DI of each cultivar was estimated by the least squares method and compared by LSD test (P=0,05). Lsmeans DI ranged from 0.5 to 5.5 in MG II-III, 0.3 to 9.1 in MG IV, 0.3 to 15.9 in MG V, 1.1 to 14.9 in MG VI and 1.8 to 14.0 in MG VII-VIII. According to lsmeansDI comparison, cultivars with different performances against SDS were identified in this work. However, should be aware that cultivars performances can vary in other years or locations, depending on environmental conditions or pathogenic differences between populations of the different species causing SDS.