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WEATHER CONDITIONS AND THEIR IMPACT ON ASIAN SOYBEAN RUST PROGRESS[1] / Variáveis meteorológicas e seus impactos no progresso da ferrugem asiática da soja. G.C. BERUSKI[2]; P.C. SENTELHAS[2]; G.M.S. CÂMARA[3]; E.M. DEL PONTE[4]; I.P. ARAÚJO JUNIOR[5]; A.B. PEREIRA[6]; [2]Departamento de Engenharia de Biossistemas / Escola Superior de Agricultura "Luiz de Queiroz" – ESALQ/USP, CEP 13418-900, Piracicaba, SP. E-mail: beruskigc@usp.br; [3]Departamento de Produção Vegetal / Escola Superior de Agricultura "Luiz de Queiroz" – ESALQ/USP, Piracicaba, SP; [4]Departamento de Fitopatologia / Universidade Federal de Viçosa, Viçosa, MG; [5]Setor de Proteção de Plantas / Fundação MT, Rondonópolis, MT; [6]Departamento de Ciências do Solo e Engenharia Agrícola / Universidade Estadual de Ponta Grossa, Ponta Grossa, PR.

The Asian soybean rust (ASR) (*Phakopsora pachyrhizi*) can reduce soybean production drastically. ASR epidemics are often triggered by weather conditions, which interfere actively on the disease progress. Therefore, weather variables can be used to estimate the risk of occurrence and severity of ASR outbreaks. This research aimed to determine the influence of different weather variables on ASR progress in two field trials in Brazil. The field trials were conducted in Ponta Grossa, PR, and Piracicaba, SP, during 2015-16 soybean growing season. In both areas a susceptible cultivar was sowed and no fungicide sprays were applied to ensure the natural disease occurrence. For each site four planting dates were adopted, from October to January, with 30-day intervals. An automatic weather station was installed to monitor the local meteorological data. After disease identification, ASR severity assessments were done based on a diagrammatic scale proposed by Godoy et al. (2006). Severity data were analyzed by disease progress curves, which were adjusted by the fitting of the experimental data to the following regression models: logistic, monomolecular and Gompertz. A simple linear regression analysis was performed between meteorological variables and ASR progress to identify those of major influence on the disease. Pearson correlation coefficient was used for identifying the degree of relationship between weather variables and ASR rate of apparent progress. In Piracicaba, for all sowing dates, the best model to describe ASR progress curve was the logistic ($r^2 = 0.926$). The same was observed for Ponta Grossa, but with a lower degree of relationship ($r^2 = 0.771$). In Piracicaba, different weather variables affected ASR progress, and no significant correlation was obtained for the second and fourth sowing dates. To first and third sowing dates, rainfall ($r = 0.988$) and cumulative LWD ($r = 0.891$) were the main variables to affect ASR progress. To Ponta Grossa, cumulative LWD was the most important weather variable to affect ASR progress during third ($r = 0.942$) and fourth ($r = 0.997$) sowing dates, whereas for the second rainfall was the major one ($r = 0.904$). No significant correlation was obtained for the first sowing date in Ponta Grossa. LWD and rainfall were closely correlated to the ASR progress, under the environmental conditions of the Ponta Grossa and Piracicaba during 2015-16 soybean growing season.

Key words: *Glycine max*; *Phakopsora pachyrhizi*; Epidemiology; Rainfall; Leaf wetness duration.

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