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Correlations between traits in soybean (*Glycine max* L.) naturally infected with Asian rust (*Phakopsora pachyrhizi*)

B. Rodrigues[1], F. Serafim[2], A.P.O. Nogueira[1], O.T. Hamawaki[2], L.B. de Sousa[2] and R.L. Hamawaki[3]

[1]Instituto de Genética e Bioquímica, Universidade Federal de Uberlândia, Uberlândia, MG, Brasil
[2]Instituto de Ciências Agrárias, Universidade Federal de Uberlândia, Uberlândia, MG, Brasil
[3]Southern Illinois University Carbondale, Urbana, IL, USA

Corresponding author: B. Rodrigues
E-mail: barbara_2730@msn.com

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ABSTRACT. Soybean (*Glycine max* L.)-breeding programs aim to develop cultivars with high grain yields and high tolerance to Asian soybean rust (*Phakopsora pachyrhizi*). Considering that the traits targeted for breeding are mainly quantitative in nature, knowledge of associations between traits allows the breeder to formulate indirect selection strategies. In this study, we investigated phenotypic, genotypic, and environmental correlations between the agronomic traits of soybean plants naturally infected with *P. pachyrhizi*, and identified agronomic traits that would be useful in indirectly selecting soybean genotypes for high yields. The study was conducted on the Capim Branco Farm, Uberlândia, Brazil, with 15 soybean genotypes, which were cultivated in a completely randomized block design with four replications. Fourteen phenotypic traits were evaluated using the GENES software. The phenotypic and genotypic correlations were positive and of a high magnitude between the total number of pods and the number of

pods with two or three grains, indicating that the total number of pods is a useful trait for the indirect selection of soybean genotypes for high grain yields. Strong environmental correlations were found between plant height at blooming and maturity and grain yield and yield components.

Key words: *Glycine max*; Agronomic trait; Asian rust; Indirect selection

