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Differences between Japanese and Brazilian isolates of Asian soybean rust in the pathogenicity to resistant varieties and resistance genes.

Yamanaka N^{1*}, Yamaoka Y², Kato M^{1,3}, Mori T¹, Kudo H^{1,4}, Passianotto AL de L⁵, Santos JVM dos⁵, Benitez ER⁶, Abdelnoor RV⁵, Soares RM⁵, Suenaga K¹ - ¹JIRCAS; ²Tsukuba Univ.; ³NARO; ⁴JATAK; ⁵Embrapa-Soja; ⁶NICS. E-mail: naokiy@jircas.affrc.go.jp. Diferenças entre os isolados japoneses e brasileiros de ferrugem asiática da soja, na patogenicidade a variedades resistentes e genes de resistência.

Asian soybean rust (ASR) has become one of the most serious threats to the soybean production in South America within several years since its first report in 2001, although it has already been observed in East and Southeast Asia for more than 100 years. Breeding lines and varieties have been selected for resistance to ASR in Asia. However, we may have to take into account the difference of pathogenicity between Asian and South American rusts. We here report the difference in pathogenicity of two bulk isolates collected in Japan and Brazil. The two isolates were evaluated for 5 resistance characters using the 13 standard soybean varieties under same experimental condition. Japanese and Brazilian isolates showed clear differences in pathogenicity in 8 of the 13 standard varieties. In addition, lesion color, one of 5 resistance, was shown not to be suitable for deciding ARS resistance. Based on our results, resistant varieties or resistance genes useful in the both countries seems to be limited. Therefore, the resistant variety universally effective to ASR should be developed by pyramiding many major resistance genes or by introducing field resistance.