

INTERACTION OF *RHIZOBIUM JAPONICUM* STRAINS AND SOYBEAN GENOTYPES

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ABSTRACT

The objective of this study was to examine the interactive effects of different *Rhizobium japonicum* strains on agronomic traits of different soybean genotypes. In this two factor factorial field experiment, inocula of three *Rhizobia* strains (TAL-379; TAL-377 and their mixture) along with uninoculated (control) were compared on four soybean genotypes, i.e., NARC-III, NARC-IV, NARC-V and William-82. All the 16 treatment combinations were arranged in randomized complete block design with four replications. The inoculation increased the plant traits of all the soybean genotypes. The genotype NARC-IV produced higher seed yield followed by William-82, NARC-III and NARC-V. The inoculum strains and soybean genotypes interacted significantly and positively to affect nodules and pods plant⁻¹, as well as grain and biological yields. The strain A was found to be the most efficient and in combination with NARC-IV and William-82 increased plant height, nodules and pods plant⁻¹, grain protein content, grain and biological yields. The strain B only affected the seed yield and plant traits of William-82 significantly and exhibited strain by genotype specificity. The mixture of strain A & B manifested similar to that of strain A in association with NARC-IV and William-82 for the traits measured but caused significant seed yield increase only in NARC-III.