

SURVIVAL OF *BRADYRHIZOBIUM* IN PRE INOCULATED SOYBEAN SEEDS

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The use of inoculants containing nitrogen-fixing bacteria allows farming systems achieve high productivity and low costs on production in the soybean crop, by removing nitrogen fertilizers. However, the process of inoculation of seeds on the moment of its planting generates additional manpower and uses of more time, which has led farmers not to perform inoculation. New technologies are being studied for the development of inoculants that can be applied in pre-inoculation in soybean seeds. The objective was to evaluate the survival and recovery of *Bradyrhizobium japonicum* (strain Semia-5079 and Semia-5080) of Rizoliq-LLI inoculant applied the seeds with cell protector Premax in a time period of 60, 45 and 30 days in pre - inoculation, and treated with different chemicals products. The experiment was conducted in the laboratory and the experimental design was randomized with three replications. It was used the technique of Spread Plate, as the normative the MAPA, 2011, and to evaluate the recovery *Bradyrhizobium* count inoculated in soybean seeds. The results were submitted to ANOVA and Tukey test at 5% probability. Inoculants Rizoliq-LLI and Rizo-LIQ had a mean counting of $1.6 \cdot 10^9$ CFU ml⁻¹ of viable cells of inoculant, as minimum specifications described in the normative instruction of MAPA. Treatment inoculated with the Rizo-LIQ, commercial inoculant recommended for soybeans had an average population of $4.3 \log^{10}$ CFU g seed⁻¹ of *Bradyrhizobium japonicum*. For treatments where inoculant Rizoliq-LLI, independent of storage time and the use of protector and chemical treatment, the cells *Bradyrhizobium* on soybean seeds had an average recovery of 75% compared to the commercial inoculant Rizo-LIQ. The counting and the recovery of *Bradyrhizobium* on the seed incubated at 60 and 45 days with treatment- Rizoliq-LLI + Premax did not differ significantly from the treatment with the inoculant Rizo-Liq. When comparing the effect of chemical treatments Rocks, Standak Top and Maxim XL in the count and *Bradyrhizobium* recovery in soybean seeds did not show statistical differences with the Rizo-Liq inoculant. The use of protector cell associated with the chemical seed treatment did not affect the number of viable cells of *Bradyrhizobium* on soybean seed, even after 60 days of inoculation.

Keywords: inoculant, pre-inoculation, Rhizobium.

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