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Residual effect of fungicides for soybean rust control in Paraguay

*Wilfrido Morel**, Department of Phytopathology, Universidad Católica Nuestra Señora de la Asunción, Campus Hohenau. Paraguay

Rodolfo Lovera, Department of Phytopathology, Universidad Católica Nuestra Señora de la Asunción, Campus Hohenau. Paraguay

Soybean Rust is the most severe disease caused by the fungus *Phakopsora pachyrhizi* affecting crops, and it is estimated that it could result in losses of up to 90%. Therefore, it is necessary to use diverse management alternatives, in which the chemical control is the most commonly used.

The aim of the research was to evaluate the residual effect of different fungicides for disease control, and to determine the efficacy of each one of them.

The setting of an experimental area of soybeans took place in the town of Natalio, Itapúa, where the implementation period spanned from February to May 2017. The experimental design in blocks was employed completely at random, which comprised 17 treatments, and 3 repetitions. The treatments involved 4 mixes of fungicides, F1: Solatenol 15% + Azoxistrobin 30%+ Difenconazole; F2: Fluxapyroxad 5% + Epoxiconazole 5% + Piraclostrobin 8,1%; F3: Prothioconazole 17,5 % + trifloxystrobin 15%; F4: Ciproconazole 14% + trifloxystrobin 33%. The first application was done in the phenological state R1 (the beginning of flowering), and then at four intervals of different days: 7, 14, 21, 28; and an absolute witness without application.

The fungicide application was done with an experimental carbon dioxide atomizer fitted out with a nozzle type XP 002, and a water flow of 120 L/ha (12.82 gal/ac.)

All the applied fungicides provided a better control of the disease in relation to the witness. The following fungicide: Solatenol 15% + Azoxistrobin 30%+ Difenconazole y Prothioconazole 17,5 % + trifloxystrobin 15%, showed a greater efficacy in terms of reducing the severity of the disease, thus supplying a major grain yield. The fungicide Prothioconazole 17,5 % + trifloxystrobin 15% was the only one keeping control of the disease up until the interval of 21 days in between applications, whereas at the interval of 28 days of the application, neither of the fungicides had kept the control efficacy.