

CHAVARRIA ASSESSORIA AGRÍCOLA LTDA.

Report technical: *Asian rust control Capacity under variations of use of fungicides and foliar fertilizers*

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1) GOAL

Evaluate the influence of variations of use of fungicide and foliar fertilization on the control of Asian rust in soybeans.

2) METHODOLOGY

It was developed in experiment county of Passo Fundo- RS, in Chamber of growth using the cultivar of soybean BMX Activa RR in design trial of blocks randomized with six repetitions.

They were sown in vases of volume of 8 L, six seeds per pot, and after the germination left three plants per pot. The vases were filled with a mixture of soil and substrate shopping (Plantmax[®]) (v:v). The plants if developed in photoperiod of 12 hours per day and temperature of air from 25° C (Figure 1).

In the stage of four sheets expanded and the fifth open sheet (V5) were carried out the applications of treatments. The treatments were the following:

T1 - witness without application of fungicide and foliage fertilizer,

T2 - Fox[®] (0.4 L ha⁻¹),

T3 - Fox[®] (0.4 L ha⁻¹) and Differs[®] (0.4 L ha⁻¹),

T4 - Fox[®] (0.4 L ha⁻¹) and Mancozeb (1.5 l. ha⁻¹),

T5 - Fox[®] (0, 4 l. ha⁻¹) and Metalosate[®] (0, 4 l. ha⁻¹) and

T6 - Metalosate[®] (0, 4 l. ha⁻¹) and Differs[®] (0, 4 l. ha⁻¹).



Figure 1. Experiment of application of fungicides and fertilizers on leaf experiment to control of Asian rust. Passo Fundo, 2016.

After 24 hours of the completion of the treatments the plants (Figure 2) were inoculated with spores of *Phakopsora pachyrhizi* (60,000 esporos.mL⁻¹).

The variables evaluated, after 21 days the process of inoculation of the pathogen were:

- 1) Distance (mm) in all the directions until the first pustule, considering the area of application of the treatments, and
- 2) Severity of disease (%) computed by the number of urédias per centimeter squared (Figure 3).

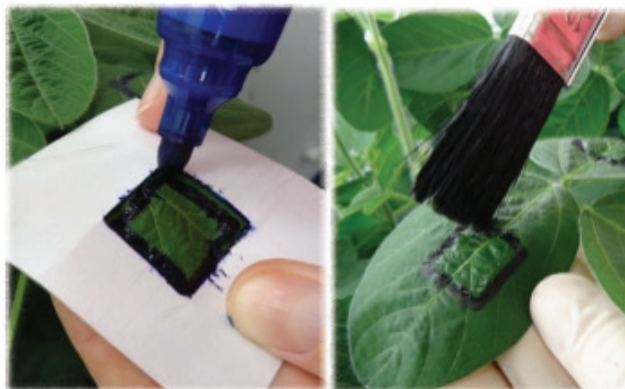


Figure 2. Illustration of the application of fungicides and fertilizers on leaf experiment of evaluation of control for Asian rust. Passo Fundo, 2016.

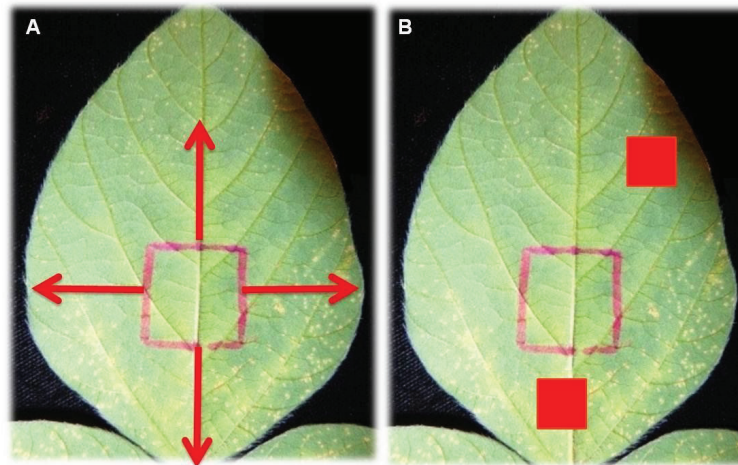


Figure 3. Illustration of the determination of the variables distance of control (A) and severity of disease (B) in experiment of fungicides and fertilizers for leaf of control of rust Asian. Passo Fundo, 2016.

The results obtained were analyzed through to analysis of variance - ANOVA and the average compared by the test of Tukey to 5% of probability of error.

3) RESULTS OBTAINED

In the experiment with the goal of assessing variations of fungicide and foliar fertilizer base of copper, it was observed that all the treatments have reduced the severity of Asian rust in relation to control (table 1). The same behavior of the treatments was observed when evaluated the distance of the first pustule to from the area of application (table 3). We highlight that the Fungicides of multi-site action reduced the severity of rust, associated to the fungicide Fox® (Table 1).

Table 1. Severity of Asian rust (%) and distance (mm) until the first the pustule from the area of application for the directions right, left, top, right and bottom in leaves of soybean in function of variations of fungicide and foliage fertilizer. Passo Fundo, 2016.

	Urédias (cm ⁻²)	Left	Top	Right	Bottom
T1 - Witness	62,3a	0,4b	0,6c	0,4b	0,3b
T2 - Fox® (0,4 L.ha ⁻¹)	22,1b	7,0a	24,9a	7,2b	5,2b
T3 - T2 + Difere® (0,4 L.ha ⁻¹)	18,2c	6,6a	31,2a	8,5a	5,9a
T4 - T2 e Mancozebe® (1,5 L.ha ⁻¹)	19,7c	6,1a	30,2a	7,4a	5,4a
T5 - T2 e Metalosate® (0,4L.ha ⁻¹)	20,3cd	8,5a	26,7a	6,9a	5,1a
Treatment	Severity (%)	Distance until the first pustule (mm)			
T6 - Metalosate® (0,4L.ha ⁻¹) e Differs® (0, 4 l. ha ⁻¹)	21,6cd	9,2a	24,4a	9,3a	8,1 ^a
CV (%)	27,8	12,5	13,4	14,2	12,6

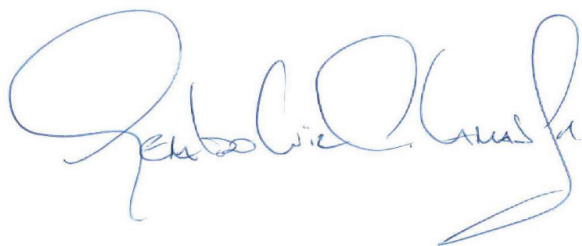
Average in a row of distinct letters in column differ between themselves to the level of 5% of probability of error in accordance with Test of Tukey. ns - Not significant

4) CONCLUSIONS

In accordance with the results obtained in the experiment performed, is it possible to conclude that the fungicides Differs® and Mancozeb® associated with the fungicide Fox® reduced the severity of Asian rust in leaves of soybean.

5) FINAL CONSIDERATIONS

For a better understanding of the Metalosate® it is necessary to carry out of a Protocol with product separately, as well as with interactions, for which are generated information more consistent.



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