PERFORMANCE OF GROUND APPLICATION SYSTEMS FOR CURATIVE CONTROL OF ASIAN SOYBEAN RUST

ULISSES R. ANTUNIASSI, ulisses@fca.unesp.br, Univ Estadual Paulista, Botucatu, SP, BRAZIL; Edivaldo D. Velini, velini@fca.unesp.br, Univ Estadual Paulista, Botucatu, SP, BRAZIL; Rone B. Oliveira, rbatista@fca.unesp.br, Univ Estadual Paulista, Botucatu, SP, BRAZIL; Maria A. P. Oliveira, mapeol@gmail.com, Univ Estadual Paulista, Botucatu, SP, BRAZIL; Alisson A. B. Mota, alisson_abm@fca.unesp.br, Univ Estadual Paulista, Botucatu, SP, BRAZIL; Rodolfo G. Chechetto, rgchechetto@fca.unesp.br, Univ Estadual Paulista, Botucatu, SP, BRAZIL.

ABSTRACT

The aim of this study was evaluate the performance of different systems of ground application for soybean rust control. The experiment was set up on the field were rust severity was 1% on the upper and 18% on the lower parts of the plants. Curative rust control was done with two applications of tebuconazole + carbendazim (Orius 250 EC + Bendazol 500 SC) at the rates of 0.3 + 0.3 L.c.p./ha (75 + 150 g a.i./ha). The first application was at R1 (aerial at 12 L/ha, fine droplets, soybean oil adjuvant) and the second was 20 days after with a self propelled sprayer, only on the experimental plots, according to the treatments: rotary atomizer with and without soybean oil adjuvant at 25 L/ha (fine droplets); Electrostatic ESP system with very fine droplets at 16 and 18 km/h (TX VX4); Hypro Twin Cap system with fine and medium droplets at 120 L/ha (TR 02 F 110 and LD 02 F 110); Hypro Twin Cap system with fine droplets at 120 L/ha (two TR 02 F 110); hollow cone nozzle with very fine droplets at 120 L/ha (HCX 04). The experiment was set up on randomized blocks with 4 replications. Soybean rust was satisfactorily controlled at the top part of the canopy in all treatments. There was a tendency of lower fungicide deposits and rust control on the bottom parts of the plants for the plots with electrostatic spraying. Treatments with rotary atomizer showed tendency of better deposits and rust control and there was no difference between treatments with and without the oil adjuvant.

METHODS

• Field area: 24 ha: Ponte de Pedra Farm (Grupo Maggi), Rondonópolis/MT, Brazil.
• Curative ASR control: 1% severity on the upper part of the canopy and 18% on the medium lower parts;
• 2 applications of tebuconazole + carbendazim (Orius 250 EC + Bendazol 500 SC) at the rates of 0.3 + 0.3 L.c.p./ha (75 + 150 g a.i./ha);
• The first application was at R1 (aerial at 12 L/ha, fine droplets, soybean oil adjuvant) and the second was 20 days after with a self propelled sprayer, only on the experimental plots (field experiment set up);
• Air humidity from 63.5% to 76.5%, air temperature from 26.6 to 31.8°C. Wind speed from 0.5 to 8.8 km/h;
• The experiment was set up on randomized blocks with 4 replications;
• Data collection: ASR control, soybean yield and carbendazin deposits (HPLC).

RESULTS

• Data collection: ASR control, soybean yield and carbendazin deposits (HPLC).

CONCLUSIONS

• Soybean rust was satisfactorily controlled at the top part of the canopy in all treatments;
• There was a tendency of lower fungicide deposits and rust control on the bottom and medium parts of the plants for the plots with electrostatic spraying;
• Treatments with rotary atomizer showed tendency of better deposits and rust control;
• There was no significant differences between treatments with and without the oil adjuvant.