APPLICATION TECHNIQUES FOR ASIAN SOYBEAN RUST CONTROL MUST OFFER HIGH PERFORMANCE ON SPRAY PENETRATION AND LEAF COVERAGE BECAUSE OF SOYBEAN DENSE CANOPY. RUST CONTROL WAS FOUND TO BE SIMILAR LEVEL OF CONTROL ACROSS THE CANOPY ON ALL TREATMENTS. LOWER PART OF THE CANOPY WERE AROUND 5% OF THE TOTAL SPRAY RECOVERY, WITH 20 TO 30% ON THE SEVERITY AND FUNGICIDE DEPOSITS WERE EVALUATED. THE RESULTS SHOWED THAT THE DEPOSITS AT THE 202 IPIANEMA AIRPLANE, USING THE FOLLOWING SYSTEMS: ATOMIZER MICRONAR AU 5000 APPLYING TO 10 L/HA, AND ATOMIZER STOL ARD TO 30 L/HA, BOTH WITH AND WITHOUT THE OIL ADDITION. RUST SEVERITY AND FUNGICIDE DEPOSITS WERE EVALUATED. THE RESULTS SHOWED THAT THE DEPOSITS AT THE LOWER PART OF THE CANOPY WERE AROUND 5% OF THE TOTAL SPRAY RECOVERY, WITH 20 TO 30% ON THE MEDIUM PART AND 60 TO 80% ON THE UPPER PART. THOSE LEVELS OF DEPOSITS WERE ENOUGH TO PROVIDE SIMILAR LEVEL OF CONTROL ACROSS THE CANOPY ON ALL TREATMENTS.

### RESULTS

**ASR control results:** The dots represent the mean values and vertical lines show the Confidence Interval at 95% (CI 95%).

- Field area: 60 ha; Rancho Fundo Farm (Sementes Petrovina), Pedra Preta/MT, Brazil.
- ASR control: 3 applications of tebuconazole + carbendazim (Orius 250 EC + Bendazol 500 SC) at the rates of 0.4 + 0.5 L c.p./ha (100 + 250 g a.i./ha);
- The first application was at R1 (aerial at 15 L/ha, fine droplets and soybean oil adjuvant) and the second was 15 days later only on the experimental plots (treatments set up). Third application 22 DAT by aerial at 15 L/ha, fine droplets and soybean oil adjuvant;
- Early curative ASR control: 0.6% incidence and 0.1% severity by the time of treatment application (second fungicide spraying);
- Six plots of 96 m x 300 m (2.88 ha) for each treatment. Four sampling positions on treated and non treated areas for each treatment;
- Ipamema EMB 202 agricultural aircraft, flight level 3 to 4 m above the canopy;
- RH from 65 to 75%, air temperature from 27.5 to 29.8°C; crosswind up to 7 km/h;
- Data collection: ASR control and carbendazin deposits (HPLC).

### METHODS

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### ABSTRACT

Application techniques for Asian Soybean Rust control must offer high performance on spray penetration and leaf coverage because of soybean dense canopy. Rust control was found to be more efficient with preventative applications with fine and very fine droplets. However, this technology is prone to drift reducing the time available for spraying so there is a large demand for application systems with high operational performance to provide the good timing for the control. The aim of this study was evaluate the performance of different aerial application for soybean rust control at the field working conditions. Soybean rust control was made applying the mixture of tebuconazole + carbendazim (Orius 250 EC + Bendazol 500 SC) at the rates of 0.4 + 0.5 L c.p./ha (100 + 250 g a.i./ha). The experiment was designed with 6 plots applied (one the mixture of tebuconazole + carbendazim (Orius 250 EC + Bendazol 500 SC) at the rates of 0.4 + 0.5 L c.p./ha (100 + 250 g a.i./ha).

### RESULTS

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Atomizer</th>
<th>Spray volume (L/ha)</th>
<th>Swath width (m)</th>
<th>Speed (km/h)</th>
<th>Droplets</th>
<th>Adjuvant*</th>
</tr>
</thead>
<tbody>
<tr>
<td>M10</td>
<td>AU5000</td>
<td>10</td>
<td>18</td>
<td>177</td>
<td>Fine</td>
<td>-</td>
</tr>
<tr>
<td>M10+o</td>
<td>AU5000</td>
<td>10</td>
<td>18</td>
<td>177</td>
<td>Fine</td>
<td>10% v/v</td>
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<td>M20</td>
<td>AU5000</td>
<td>20</td>
<td>16</td>
<td>177</td>
<td>Fine</td>
<td>-</td>
</tr>
<tr>
<td>M20+o</td>
<td>AU5000</td>
<td>20</td>
<td>16</td>
<td>177</td>
<td>Fine</td>
<td>5% v/v</td>
</tr>
<tr>
<td>S30</td>
<td>Stol ARD</td>
<td>30</td>
<td>20</td>
<td>185</td>
<td>Fine</td>
<td>-</td>
</tr>
<tr>
<td>S30+o</td>
<td>Stol ARD</td>
<td>30</td>
<td>20</td>
<td>185</td>
<td>Fine</td>
<td>3.3% v/v</td>
</tr>
</tbody>
</table>

* Emulsified soybean oil

### METHODS

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