



Adjuvants Improve Fungicide Control of Asian Soybean Rust in Brasil

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Objectives

To further the understanding of fungicide applications where adjuvants may exhibit an important role in efficacy enhancement.

Materials & Methods

Fungicides

Impact® 150g/l SC	Cheminova	flutriafol	@ 500 ml/ha
Priori® 2.08 FL	Syngenta	azoxystrobin	@ 200 ml/ha
Folicur® 3.6 FL	Bayer Crop Sci.	tebuconazole	@ 500 ml/ha
Opera®	BASF	pyraclostrobin + epoxiconazole	@ 500 ml/ha

Adjuvants

Adsee® AB-650	Akzo Nobel, 100% alkoxyated fatty amine + wetting agent & buffer
Assist®	BASF, 75.6% paraffin mineral oil
Nimbus®	Syngenta, 42.8% paraffin mineral oil
Silwet® L77	Loveland, Organosilicone surfactant

Test Conditions

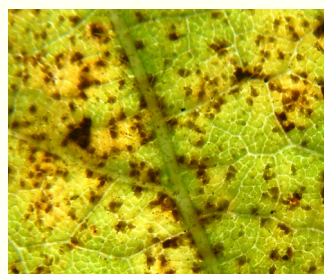
Trial protocols were established with a contract research organization to evaluate the adjuvant effect of alkoxyated fatty amine adjuvants with fungicides in soybean. Each protocol was based upon the experience of the contractor and the local conditions where the study was to be performed.

An Asian Soybean Rust (ASR) study was set up in a field with prior season soybean culture, located at PLANTEC - Planejamento eTecnologia Agrícola LTDA, Itacemápolis, São Paulo, Brasil. The study on soybean (Monsoy 800) was set in a randomized complete block design with 4 replicates of each treatment. Plots measured 15 m². Treatments were applied using a CO₂ backpack sprayer at 200 l/ha for two foliar applications (applied on 2/10/2005 and 2/25/2005).

Assessment and Evaluation

Assessment of treatment efficacy was disease control and defoliation rated 1, 2, 3, 4, and 5 WAT. Visual lab evaluation was performed on 20 leaflets harvested from each of the replicated plots. Grading of the ASR affected area was based on the evaluation grading scale proposed by Canteri, M.G. & Godoy, C.V. in Summa Phytopathologica, Araras SP, 2003, vol.1, pg.32.

The crop was further maintained to harvest, to allow a yield determination (weight of seeds for 3.6 M² in the plot and translated to kg/ha).



Phakopsora pachyrhizi on soybean



Results & Discussion

Table 1 – Percent ASR infection 5 weeks after treatment

ADJUVANT & RATE	IMPACT 500 ml/ha	FOLICUR 500 ml/ha	PRIORI 200 ml/ha	OPERA 500 ml/ha
% INFECTION				
Untreated	45.8	69.1	66.1	71.3
No Adjuvant	6.9	11.9	27.9	9.2
AB-650 @ 0.125% v/v	6.0	8.3	16.3	6.1
AB-650 @ 0.25% v/v	6.1	8.5	14.0	6.5
Nimbus @ 0.5% v/v	7.3	8.4	14.6	6.2
Silwet L77 @ 0.125% v/v	6.6	9.2	12.6	6.3
Assist @ 0.125% v/v	6.4	9.2	14.0	6.4

Table 2 – Soybean yield after fungicide / adjuvant treatments (kg/ha)

ADJUVANT & RATE	IMPACT 500 ml/ha	FOLICUR 500 ml/ha	PRIORI 200 ml/ha	OPERA 500 ml/ha
YIELD (KG/HA)				
Untreated	798	556	538	712
No Adjuvant	1192	851	799	1163
AB-650 @ 0.125% v/v	1394	1189	1192	1833
AB-650 @ 0.25% v/v	1318	981	992	1491
Nimbus @ 0.5% v/v	1135	1007	1410	1215
Silwet L77 @ 0.125% v/v	1183	868	1227	1413
Assist @ 0.125% v/v	1200	1215	1048	1314

Summary

Asian Soybean Rust – Control

AB-650 was the best adjuvant across all fungicides tested. Folicur, Priori, and Opera benefited from adjuvant addition. Impact was a strong performer alone.

Asian Soybean Rust – Yield

AB-650 @ 0.125% directionally increased yield best of all adjuvants.



Conclusions

Adjuvants generally improved fungicide performance.

- The fatty amine alkoxyates performed well as tank mix adjuvants for fungicide treatment of crops.
- Adjuvant Adsee AB-650 increased the activity of generic fungicides to a level competitive with the newer strobilurin fungicides.
- There was indication that these adjuvants can improve the yield quality and quantity of the crops for a *Total Plant Health* effect.



Agro Applications

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