ES-Results from around the world
AUSTRALIA

2002 Final Report
Field Evaluation and Droplet Spectrum Analysis for the Spectrum Electrostatic System on Cotton

Spectrum Electrostatics vs. Micronair

ELECTROSTATICS

MICRONAIR
CONCLUSIONS

Both Systems applied droplets at 150 micron.
ES application was made at 10L/ha (1GPA)
Micronair applications were at 30 L/ha (3GPA.)

1. ES and Micronair delivered equivalent levels of deposition.
2. ES had significantly less dye on flat plates at ground level.
3. ES produced a rapid reduction in drift leaving the field.

SUMMARY

“Results obtained in this experiment indicate that the electrostatics system does warrant further investigation, particularly considering that in this experiment the electrostatic system was able to delivery equivalent levels of deposition, lower CV’s and similar or less drift at application rates of 10 L/ha when compared with the Micronair au5000 at 30 L/ha.”
AUSTRALIA

1 GPA ELECTROSTATIC APPLICATION

SORGHUM DESSICATION-MUNGINDI
BRAZIL-RICE-SOYBEANS

RICE

SOYBEANS
150 micron droplets gives improved penetration and better rust control than larger (250-300 microns).

ES @ 1gpa delivered 98.9% control @ 71% humidity & 99.6% control @ 64% humidity.
SOYBEAN RUST RESULTS

ALAN POULSEN, TAIM AERO AGRICOLA LTDA, RIO GRANDE DO SUL, BRAZIL

- Operated a ES system for 4 years
- When rust infections were high, treatment is needed within 2-3 days
- Temperatures > 90 degrees rendered conventional applications ineffective due to evaporation causing operators to stop their applications
- Crop oils helped the conventional applications but added additional costs
- ES applications > 90 degrees were 89% effective even with humidity's as low as 38%
SOUTH AFRICA

ES vs. CONVENTIONAL-SUGARCANE

GERT BADENHORST, SWAZILAND, AFRICA
TEXAS - COTTON

1 GPA ELECTROSTATICS  5 GPA CONV.

SPECK THORNTON, SLATON, TX
MINNESOTA

ED NEWBURG, MN, ES SYSTEM ON AN EAGLE
Insecticide Timing is Critical:

Tardy Detection or Delay in Application can have Big Impacts

Sprayed  8/8  None  8/13  7/31
Yield (bu/A)  42  36  42  55

Insecticides – Warrior @ 3.2 oz/A (7/31, 8/8),
Lorsban @ 1 pt/A (8/13) in 4 gpa by air
Soybean Aphid Insecticides: Aerial vs. Ground on Full-Canopy Soybean

Noetzel, Holen, Holder & Holen – Fergus Falls, MN

Warrior applied at 3 oz/A in 12 gpa ground and 5 gpa air on July 30, 2003.
Soybean Aphid Insecticides:
Aerial vs. Ground on Soybeans after Peas

Ostlie, Ike, Newberg SkySpray, Broderius – Hector, MN

Warrior applied at 3 oz/A in 15 gpa ground and 5 gpa air on July 30, 2003.
Soybean Aphid Insecticides:
Comparing Technologies on Full-Canopy Soybean
Ostlie, Ike, Newberg SkySpray, Dahlco Seeds – Corvuso, MN
Warrior applied at 2 oz/A in 20 gpa ground, 4 gpa air, 1 gpa electrostatic on Aug. 10, 2005.

Aphids 7 DAT
Treatment bars with the same letter do not differ (p=0.05).
Results of Spray Technology Study on Soybean Aphid, MN – 2005

Ostlie, Price, Ike, Newberg SkySpray & Dahlco Seeds

- The electrostatic system provided significantly better control of soybean aphids (99%) than either conventional air (79%) or ground (82.0%) application of Warrior T (2 oz/A).
- Conventional air and ground application were equivalent, as seen in two previous studies.
- Yields reflected aphid control 7 days after treatment. Yield protection from electrostatic application (+16.1 bu/A), exceeded conventional air (+10.8) or ground (+10.6).
- Observations on distribution of surviving aphids indicates that both conventional air and ground applications only partially penetrated the full canopy while the electrostatic application penetrated completely.

Funded by MN Soybean Research & Promotion Council
Implications of Preliminary Research on Electrostatic System and Soybean Aphid

- Improved control of soybean aphids, particularly in full canopy soybeans, and possibly re-treatments.
- Potential to reduce insecticide application rates.
- Better yield protection.
- Greater efficiency of aerial application (1 gpa vs 3-5 gpa) reduces applicators’ fuel costs.
- Faster application reduces customer backlog and costly application delays during soybean aphid outbreaks.
CALIFORNIA
CALIFORNIA

Carrots & volunteer grain
2 weeks after application

Carrots & grain @ 2 weeks
post application

1 GPA ES POST HERBICIDE
APPLICATION INSTEAD OF THE
NORMAL 10 GPA.
DRIFT?

AIRCRAFT HEADING EAST

WIND FROM SOUTHEAST
AT 7 MPH
RESEARCH NEEDED FOR 2006

- Correlation between spray density and optimum control
- Fungicide studies (reducing 5 gpa applications to 1 gpa ES)
- CPP—which ones are effective with ES and which are not
CREDITS

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