

Interaction of Soybean Fungicides and Insecticides with Glyphosate.

Project Code: 04-20A-ME110 Location: Belleville Research Center
 Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 10-14-04

Objective:

Determine the impact of tank-mixing glyphosate with fungicides and/or insecticides on the pesticide efficacy and soybean grain yield.

Weed Code Common Name Scientific Name

1. NA

Crop 1: GLXMA soybean Variety: AG 4403 RR
 Planting Method: Seeded Planting Date: 5-22-04
 Rate: 75 lb/A Depth: 1.0 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 27 FT Reps: 4
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: GLXMA, 2003

Field Prep./Maintenance: N 0 LB/A, P2O5 50 LB/A, K2O 100 LB/A

Soil Name: Ebbert % OM: 2.6 pH: 6.1 CEC: 13
 Texture: Silt loam Fert. Level: P1: 78 LB/A, K: 423 LB/A

APPLICATION DESCRIPTION

A
 Application Date: 7-26-04
 Time of Day: 13:00
 Application Method: Spray
 Application Timing: R3
 Applic. Placement: BROFOL
 Air Temp., Unit: 76 F
 % Relative Humidity: 58
 Wind Velocity, Unit: 5-7 MPH
 Soil Moisture: ABONOR

CROP STAGE AT EACH APPLICATION

A
 Crop 1 Code, Stage: GLXMA R3
 Height, Unit: 28-30 IN

APPLICATION EQUIPMENT

A
 Appl. Equipment: CO2 sprayer
 Operating Pressure: 40 PSI
 Nozzle Type: Flat fan
 Nozzle Size: 8003
 Boom Length, Unit: 7.5 FT
 Spray Volume, Unit: 20 GPA

NOTES:

Harvested 10-4-04, (2) 30 inch rows x 24 ft.

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|-------------------|--|--|--|--|--|--|--|---------|---------|---------|----------|---------|--|
| Weed Code | | | | | | | | | | | | | |
| Crop Code | | | | | | | | | | | | | |
| Rating Data Type | | | | | | | | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | |
| Rating Unit | | | | | | | | Injury | Injury | Injury | Moisture | Yield | |
| Rating Date | | | | | | | | Percent | Percent | Percent | Percent | bu/A | |
| Trt-Eval Interval | | | | | | | | 8-2-04 | 8-9-04 | 8-23-04 | 10-4-04 | 10-4-04 | |
| | | | | | | | | 7 DA-A | 14 DA-A | 28 DA-A | | | |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Prod Rate | Prod Unit | Grow Stg | Appl Code | | | | | |
|---------|----------------|-----------|-----------|-------|-----------|-----------|-----------|----------|-----------|---|---|---|------|----|
| 1 | NONTREATED | | | | | | | | | 0 | 0 | 0 | 10.1 | 67 |
| 2 | WARRIOR | 1 | CS | 0.02 | LB A/A | 2.56 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.2 | 67 |
| 3 | LORSBAN | 4 | EC | 0.5 | LB A/A | 1.0 | PT/A | R3 | A | 9 | 2 | 0 | 10.3 | 63 |
| 4 | HEADLINE | 2.09 | EC | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.5 | 71 |
| 5 | QUADRI | 2.08 | F | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.3 | 69 |
| 6 | TILT | 3.6 | F | 0.112 | LB A/A | 4 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.2 | 69 |
| 7 | WARRIOR | 1 | CS | 0.02 | LB A/A | 2.56 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.8 | 72 |
| 7 | HEADLINE | 2.09 | EC | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | | | | | |
| 8 | WARRIOR | 1 | CS | 0.02 | LB A/A | 2.56 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.3 | 70 |
| 8 | QUADRI | 2.08 | F | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | | | | | |
| 9 | WARRIOR | 1 | CS | 0.02 | LB A/A | 2.56 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.1 | 69 |
| 9 | TILT | 3.6 | F | 0.112 | LB A/A | 4 | FL OZ/A | R3 | A | | | | | |
| 10 | LORSBAN | 4 | EC | 0.5 | LB A/A | 1.0 | PT/A | R3 | A | 6 | 1 | 0 | 10.4 | 68 |
| 10 | HEADLINE | 2.09 | EC | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | | | | | |
| 11 | LORSBAN | 4 | EC | 0.5 | LB A/A | 1.0 | PT/A | R3 | A | 7 | 2 | 0 | 10.6 | 64 |
| 11 | TILT | 3.6 | F | 0.112 | LB A/A | 4 | FL OZ/A | R3 | A | | | | | |
| 12 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.1 | 66 |
| 13 | WARRIOR | 1 | CS | 0.02 | LB A/A | 2.56 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.0 | 67 |
| 13 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| 14 | LORSBAN | 4 | EC | 0.5 | LB A/A | 1.0 | PT/A | R3 | A | 9 | 2 | 0 | 10.0 | 64 |
| 14 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| 15 | HEADLINE | 2.09 | EC | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.3 | 70 |
| 15 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| 16 | QUADRI | 2.08 | F | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.2 | 68 |
| 16 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| 17 | TILT | 3.6 | F | 0.112 | LB A/A | 4 | FL OZ/A | R3 | A | 0 | 0 | 0 | 9.9 | 66 |
| 17 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| 18 | WARRIOR | 1 | CS | 0.02 | LB A/A | 2.56 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.4 | 70 |
| 18 | HEADLINE | 2.09 | EC | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | | | | | |
| 18 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| 19 | WARRIOR | 1 | CS | 0.02 | LB A/A | 2.56 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.1 | 70 |
| 19 | QUADRI | 2.08 | F | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | | | | | |
| 19 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |

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|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Weed Code | | | | | | | | | | | | | | |
| Crop Code | | | | | | | | | | | | | | |
| Rating Data Type | | | | | | | | | | | | | | |
| Rating Unit | | | | | | | | | | | | | | |
| Rating Date | | | | | | | | | | | | | | |
| Trt-Eval Interval | | | | | | | | | | | | | | |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Unit | Prod Rate | Prod Unit | Grow Stg | Appl Code | GLXMA Injury Percent 8-2-04 7 DA-A | GLXMA Injury Percent 8-9-04 14 DA-A | GLXMA Injury Percent 8-23-04 28 DA-A | GLXMA Moisture Percent 10-4-04 | GLXMA Yield bu/A 10-4-04 |
|-------------------|----------------|-----------|-----------|-------|---------|-----------|-----------|----------|-----------|------------------------------------|-------------------------------------|--------------------------------------|--------------------------------|--------------------------|
| 20 | WARRIOR | 1 | CS | 0.02 | LB A/A | 2.56 | FL OZ/A | R3 | A | 0 | 0 | 0 | 10.0 | 68 |
| 20 | TILT | 3.6 | F | 0.112 | LB A/A | 4 | FL OZ/A | R3 | A | | | | | |
| 20 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| 21 | LORSBAN | 4 | EC | 0.5 | LB A/A | 1.0 | PT/A | R3 | A | 4 | 1 | 0 | 10.3 | 69 |
| 21 | HEADLINE | 2.09 | EC | 0.1 | LB A/A | 6 | FL OZ/A | R3 | A | | | | | |
| 21 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| 22 | LORSBAN | 4 | EC | 0.5 | LB A/A | 1.0 | PT/A | R3 | A | 3 | 1 | 0 | 9.9 | 62 |
| 22 | TILT | 3.6 | F | 0.112 | LB A/A | 4 | FL OZ/A | R3 | A | | | | | |
| 22 | ROUNDUP W-MAX | 4.5 | SL | 1.12 | LB AE/A | 32 | FL OZ/A | R3 | A | | | | | |
| LSD (P=.05) | | | | | | | | | | 2.4 | 1.0 | 0.0 | 0.49 | 4.0 |
| Replicate F | | | | | | | | | | 1.236 | 0.151 | 0.000 | 13.878 | 2.907 |
| Replicate Prob(F) | | | | | | | | | | 0.3041 | 0.9287 | 1.0000 | 0.0001 | 0.0415 |
| Treatment F | | | | | | | | | | 12.661 | 4.914 | 0.000 | 1.498 | 3.534 |
| Treatment Prob(F) | | | | | | | | | | 0.0001 | 0.0001 | 1.0000 | 0.1108 | 0.0001 |

Trial Comments

1. Protocol: ISPOB.
2. Ratings: Note any disease or insect control 7-28 DAT; CI 7, 14 and 28 DAT.
3. Grain yield.
4. Blanket PRE application of Prowl and Scepter at 0.75 and 0.125 lbai/A, respectively on 5-23-04.
5. Blanket POST application of glyphosate at 0.75 lbae/A was applied to V3-V4 soybeans on 6-21-04.
6. DA-A = Days after R3 application.
7. Harvested 10-4-04, (2) 30 inch rows x 24 ft.