

# Adjuvant Studies, Corn or Soybean

1-25-08 (07-HRC-WU3-W70)

Southern Illinois University

Oil Adjuvants with Option - Agrilience.

Project Code: 07-HRC-WU3-W70    Location: Agronomy Research Center  
Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country:            Carbondale            IL 62901 USA  
Trial Status: Final                Updated:            1-23-08

## Objective:

Evaluate the efficacy of Option on grass weeds applied with experimental adjuvants versus a methylated seed oil.

| Weed Code | Common Name            | Scientific Name                       |
|-----------|------------------------|---------------------------------------|
| 1. BRAPP  | signalgrass, broadleaf | Brachiaria platyphylla (Griseb.) Nash |
| 2. SETFA  | foxtail, giant         | Setaria faberi Herrm.                 |

|                  |        |             |                |           |
|------------------|--------|-------------|----------------|-----------|
| Crop 1:          | ZEAMX  | corn, field | Variety:       | 33P70 RR2 |
| Planting Method: | Seeded |             | Planting Date: | 4-26-07   |
| Rate:            | 28000  | S/A         | Depth:         | 1.5 IN    |
| Row Spacing:     | 30     | IN          |                |           |

|                          |              |               |                    |                           |    |       |   |
|--------------------------|--------------|---------------|--------------------|---------------------------|----|-------|---|
| Plot Width, Unit:        | 10           | FT            | Plot Length, Unit: | 25                        | FT | Reps: | 3 |
| Tillage Type:            | Reduced-Till |               | Study Design:      | Randomized complete block |    |       |   |
| Previous Crop, Year:     | GLXMA,       | 2006          |                    |                           |    |       |   |
| Field Prep./Maintenance: | N 166 LB/A,  | P205 92 LB/A, | K20 90 LB/A        |                           |    |       |   |

|          |           |     |              |              |             |   |
|----------|-----------|-----|--------------|--------------|-------------|---|
|          | % OM:     | 1.6 | pH:          | 7            | CEC:        | 8 |
| Texture: | Silt loam |     | Fert. Level: | P1: 42 LB/A, | K: 257 LB/A |   |

## APPLICATION DESCRIPTION

A

Application Date: 6-1-07  
Time of Day: 9:00  
Application Method: Spray  
Application Timing: 4-6"W  
Applic. Placement: BROFOL  
Air Temp., Unit: 75 F  
% Relative Humidity: 56  
Wind Velocity, Unit: 2-5 MPH  
Dew Presence (Y/N): Y  
Soil Temp., Unit: 72 F  
Soil Moisture: NORMAL  
% Cloud Cover: 10

## CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage: ZEAMX V4-V6  
Height, Unit: 16-24 IN

## WEED STAGE AT EACH APPLICATION

A

Weed 1 Code: BRAPP  
Stage(leaves): 5-10  
Height(inches): 4-7  
Density: High

Weed 2 Code: SETFA  
Stage(leaves): 3-5  
Height(inches): 4-13  
Density: Medium

## APPLICATION EQUIPMENT

A

Appl. Equipment: CO2 sprayer  
Operating Pressure: 40 PSI  
Nozzle Type: Flat fan  
Nozzle Size: XR 8002  
Boom Length, Unit: 7.5 FT  
Spray Volume, Unit: 15 GPA

## NOTES:

Oil Adjuvants with Option - Agrilience.

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| Weed Code         |         |         | BRAPP   | BRAPP   | SETFA   | SETFA   |
|-------------------|---------|---------|---------|---------|---------|---------|
| Crop Code         |         |         |         |         |         |         |
| Rating Data Type  | ZEAMX   | ZEAMX   |         |         |         |         |
| Rating Unit       | Injury  | Injury  | Control | Control | Control | Control |
| Rating Date       | Percent | Percent | Percent | Percent | Percent | Percent |
| Trt-Eval Interval | 6-15-07 | 6-29-07 | 6-15-07 | 6-29-07 | 6-15-07 | 6-29-07 |
|                   | 14 DA-A | 28 DA-A | 14 DA-A | 28 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 a    | 0 a    | 0 f    | 0 e    | 0 h    | 0 g    |
| 2                 | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 7 de   | 8 de   | 10 g   | 8 fg   |
| 3                 | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 15 bc  | 10 cde | 28 bcd | 13 d-g |
| 3                 | DESTINY MSO    | 100       | LIQ       | 1.0    | % v/v     | 1         | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 3                 | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 4                 | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 15 bc  | 20 bc  | 25 de  | 17 def |
| 4                 | PRIME OIL COC  | 100       | LIQ       | 1.0    | % v/v     | 1         | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 4                 | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 5                 | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 12 cd  | 13 bcd | 27 cde | 23 cde |
| 5                 | SUPERB HC      | 100       | LIQ       | 0.5    | % v/v     | 0.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 5                 | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 6                 | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 17 bc  | 23 ab  | 27 cde | 47 a   |
| 6                 | NEWTONE        | 100       | LIQ       | 1.0    | % v/v     | 1         | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 7                 | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 30 a   | 33 a   | 37 a   | 40 ab  |
| 7                 | AG 05006       | 100       | LIQ       | 0.5    | % v/v     | 0.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 7                 | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 8                 | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 19 b   | 20 bc  | 30 bc  | 33 abc |
| 8                 | AG 05006       | 100       | LIQ       | 1.0    | % v/v     | 1         | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 8                 | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 9                 | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 14 bc  | 20 bc  | 20 f   | 27 bcd |
| 9                 | AG 05055       | 100       | LIQ       | 1.5    | % v/v     | 1.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 10                | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 18 b   | 33 a   | 32 b   | 27 bcd |
| 10                | AG 05055       | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 11                | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 17 bc  | 17 bcd | 25 de  | 17 def |
| 11                | AG 07042       | 100       | LIQ       | 0.5    | % v/v     | 0.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 11                | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 12                | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 15 bc  | 20 bc  | 23 ef  | 13 d-g |
| 12                | AG 07040       | 100       | LIQ       | 0.25   | % v/v     | 0.25      | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 12                | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 13                | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 18 b   | 23 ab  | 28 bcd | 23 cde |
| 13                | AG 06021       | 100       | LIQ       | 0.25   | % v/v     | 0.25      | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 13                | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| 14                | OPTION         | 35        | WG        | 0.0328 | lb ai/a   | 1.5       | oz/a      | 4-6"W    | A         | 0 a    | 0 a    | 3 ef   | 13 bcd | 8 g    | 10 efg |
| 14                | N-PAK AMS      | 100       | LIQ       | 2.5    | % v/v     | 2.5       | % v/v     | 4-6"W    | A         |        |        |        |        |        |        |
| LSD (P=.05)       |                |           |           |        |           |           |           |          |           | 0.0    | 0.0    | 5.5    | 10.8   | 5.0    | 15.0   |
| Replicate F       |                |           |           |        |           |           |           |          |           | 0.000  | 0.000  | 1.212  | 0.043  | 0.202  | 0.052  |
| Replicate Prob(F) |                |           |           |        |           |           |           |          |           | 1.0000 | 1.0000 | 0.3138 | 0.9580 | 0.8183 | 0.9492 |

Means followed by same letter do not significantly differ ( $P=0.05$ , LSD)

### Trial Comments

1. Protocol: Agrilience.
2. Ratings: CI/WC at 14 + 28 DAT.
3. DA-A = Days after 4-6"W application.