

LSU Northeast Research Station

EVALUATION OF SEQUENCE WEED CONTROL PROGRAMS IN SOYBEAN AS AFFECTED BY INSECTICIDE CO-APPLICATION

Trial ID: SJSB0407 Study Dir.:
 Location: Investigator: Donnie Miller

SITE AND DESIGN

Plot Width, Unit: 6.67 FT Plot Length, Unit: 25 FT Reps: 4

Site Type: _____

Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK

Trial Initiation Comments:

| | Previous Crops | Previous Pesticides | Year |
|----|----------------|---------------------|------|
| 1. | | | |

APPLICATION DESCRIPTION

| | A | B |
|----------------------|------------|------------|
| Application Date: | 1/Jun/2004 | 8/Jun/2004 |
| Time of Day: | 4:00 PM | 2:40 PM |
| Application Method: | SPRAY | SPRAY |
| Application Timing: | EAPOCR | POSPOS |
| Applic. Placement: | BROFOL | BROFOL |
| Air Temp., Unit: | 81 F | 94 F |
| % Relative Humidity: | 70 | 55 |
| Wind Velocity, Unit: | 1.3 MPH | 2 MPH |
| Dew Presence (Y/N): | N | N |
| Water Hardness: | | |
| Soil Temp., Unit: | 86 F | 92 F |
| Soil Moisture: | MOIST | DRY |
| % Cloud Cover: | 100 | 30 |

CROP STAGE AT EACH APPLICATION

| | A | B |
|---------------------|----------------|----------------|
| Crop 1 Code, Stage: | GLXMA 3 TRIFOL | GLXMA 5 TRIFOL |
| Stage Scale: | | |
| Height, Unit: | | |

WEED STAGE AT EACH APPLICATION

| | A | B |
|---------------------|------------|------------|
| Weed 1 Code, Stage: | ECHCG 2-3" | ECHCG 2-3" |
| Stage Scale: | | |
| Density, Unit: | | |
| Weed 2 Code, Stage: | SEBEX 2-3" | SEBEX 2-3" |
| Stage Scale: | | |
| Density, Unit: | | |
| Weed 3 Code, Stage: | SORHA 2-3" | SORHA 2-3" |
| Stage Scale: | | |
| Density, Unit: | | |
| Weed 4 Code, Stage: | IPOLA 2-3" | IPOLA 2-3" |
| Stage Scale: | | |
| Density, Unit: | | |
| Weed 5 Code, Stage: | IPOHG 2-3" | IPOHG 2-3" |
| Stage Scale: | | |
| Density, Unit: | | |
| Weed 6 Code, Stage: | AMARE 2-3" | AMARE 2-3" |
| Stage Scale: | | |
| Density, Unit: | | |
| Weed 7 Code, Stage: | CASOB 2-3" | CASOB 2-3" |
| Stage Scale: | | |
| Density, Unit: | | |
| Weed 8 Code, Stage: | | |
| Stage Scale: | | |
| Density, Unit: | | |

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APPLICATION EQUIPMENT

| | A | B |
|------------------------------|------------|------------|
| Appl. Equipment: | CO2 BCPCCK | CO2 BCPCCK |
| Operating Pressure: | 35 PSI | 35 PSI |
| Nozzle Type: | A1 | A1 |
| Nozzle Size: | 11002 | 11002 |
| Nozzle Spacing, Unit: | 20 | 20 |
| Nozzles/Row: | 2 | 2 |
| Band Width, Unit: | | |
| Boom Length, Unit: | | |
| Boom Height, Unit: | | |
| Ground Speed, Unit: | 3.2 MPH | 3.2 MPH |
| Incorporation Equip.: | | |
| Hours to Incorp.: | | |
| Incorp. Depth, Unit: | | |
| Carrier: | WATER | WATER |
| Spray Volume, Unit: | 15 GPA | 15 GPA |
| Spray pH: | | |
| Propellant: | | |
| Tank Mix (Y/N): | | |

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| | | | | | | | | | | | |
|--------------------|--------------------|-------|---------|--|------------|------------|------------|------------|------------|------------|----------|
| Trial ID: SJSB0407 | | | | Study Dir.: Location: Investigator: Donnie Miller | | | | | | | |
| Weed Code | | | | SORHA | ECHCG | SEBEX | IPOHG | IPOLA | AMARE | GLXMA | |
| Crop Code | | | | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | |
| Rating Data Type | | | | CONTROL | CONTROL | CONTROL | CONTROL | CONTROL | CONTROL | INJURY | |
| Rating Unit | | | | % | % | % | % | % | % | % | |
| Rating Date | | | | 8/Jun/2006 | 8/Jun/2006 | 8/Jun/2006 | 8/Jun/2006 | 8/Jun/2006 | 8/Jun/2006 | 8/Jun/2006 | |
| Trt-Eval Interval | | | | 7 DA-A | 7 DA-A | 7 DA-A | 7 DA-A | 7 DA-A | 7 DA-A | 7 DA-A | |
| ARM Action Codes | | | | | | | | | | | |
| # Subsamples, Dec. | | | | | | | | | | | |
| Trt No. | Treatment Name | Rate | Unit | Appl Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | SEQUENCE | 2.5 | pt/a | A | 60.00 bcd | 51.25 de | 92.50 ab | 51.25 bc | 51.25 bc | 95.00 a | 8.75 b |
| 2 | SEQUENCE | 3.0 | pt/a | A | 67.50 a-d | 65.00 bcd | 92.50 ab | 65.00 abc | 65.00 abc | 95.00 a | 3.75 bcd |
| 3 | SEQUENCE | 4.0 | pt/a | A | 66.25 a-d | 78.75 ab | 92.50 ab | 65.00 abc | 65.00 abc | 95.00 a | 20.00 a |
| 4 | DUAL MAGNUM | 1.0 | pt/a | A | 0.00 e | 8.75 f | 15.00 c | 15.00 d | 15.00 d | 28.75 b | 3.75 bcd |
| 5 | TOUCHDOWN TOTAL | 1.5 | pt/a | A | 87.50 a | 83.75 a | 95.00 a | 71.25 a | 71.25 a | 92.50 a | 0.00 d |
| 6 | SEQUENCE | 2.5 | pt/a | A | 73.75 abc | 71.25 abc | 92.50 ab | 62.50 abc | 62.50 abc | 92.50 a | 2.50 cd |
| | KARATE W/ ZEON | 0.025 | lb ai/a | A | | | | | | | |
| 7 | SEQUENCE | 2.5 | pt/a | A | 76.25 ab | 66.25 bcd | 93.75 a | 65.00 abc | 65.00 abc | 90.00 a | 6.25 bc |
| | CENTRIC | 0.05 | lb ai/a | A | | | | | | | |
| 8 | SEQUENCE | 2.5 | pt/a | A | 45.00 d | 62.50 cd | 93.75 a | 71.25 a | 71.25 a | 95.00 a | 15.00 a |
| | SEVIN 4F | 0.5 | lb ai/a | A | | | | | | | |
| 9 | SEQUENCE | 2.5 | pt/a | A | 58.75 bcd | 68.75 abc | 90.00 ab | 66.25 ab | 66.25 ab | 93.75 a | 2.50 cd |
| | LARVIN | 0.4 | lb ai/a | A | | | | | | | |
| 10 | SEQUENCE | 2.5 | pt/a | A | 71.25 abc | 63.75 bcd | 88.75 ab | 75.00 a | 75.00 a | 95.00 a | 7.50 bc |
| | LORSBAN 4 EC | 0.5 | lb ai/a | A | | | | | | | |
| 11 | TOUCHDOWN TOTAL | 12 | fl oz/a | A | 48.75 cd | 37.50 e | 85.00 b | 48.75 c | 48.75 c | 86.25 a | 0.00 d |
| | TOUCHDOWN TOTAL | 12 | fl oz/a | B | | | | | | | |
| 12 | NONTREATED | | | | 0.00 e | 0.00 f | 0.00 d | 0.00 d | 0.00 d | 0.00 c | 0.00 d |
| | LSD (P=.05) | | | | 25.561 | 16.245 | 8.082 | 16.893 | 16.893 | 19.639 | 6.049 |
| | Standard Deviation | | | | 17.703 | 11.251 | 5.597 | 11.700 | 11.700 | 13.601 | 4.189 |
| | CV | | | | 32.43 | 20.53 | 7.21 | 21.39 | 21.39 | 17.02 | 71.82 |
| | Grand Mean | | | | 54.58 | 54.79 | 77.6 | 54.69 | 54.69 | 79.9 | 5.83 |
| | Bartlett's X2 | | | | 17.361 | 13.841 | 10.83 | 4.696 | 4.696 | 32.586 | 8.676 |
| | P(Bartlett's X2) | | | | 0.043* | 0.18 | 0.288 | 0.911 | 0.911 | 0.001* | 0.37 |
| | Replicate F | | | | 0.235 | 0.192 | 1.834 | 1.100 | 1.100 | 0.543 | 1.345 |
| | Replicate Prob(F) | | | | 0.8714 | 0.9011 | 0.1601 | 0.3631 | 0.3631 | 0.6560 | 0.2765 |
| | Treatment F | | | | 10.017 | 22.083 | 139.120 | 16.173 | 16.173 | 21.214 | 8.892 |
| | Treatment Prob(F) | | | | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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| Weed Code | SORHA | ECHCG | SEBEX | IPOHG | IPOLA | AMARE | GLXMA | | |
|--------------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|---------|-----------|
| Crop Code | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | | |
| Rating Data Type | CONTROL | CONTROL | CONTROL | CONTROL | CONTROL | CONTROL | INJURY | | |
| Rating Unit | % | % | % | % | % | % | % | | |
| Rating Date | 15/Jun/2006 | 15/Jun/2006 | 15/Jun/2006 | 15/Jun/2006 | 15/Jun/2006 | 15/Jun/2006 | 15/Jun/2006 | | |
| Trt-Eval Interval | 14 DA-A | 14 DA-A | 14 DA-A | 14 DA-A | 14 DA-A | 14 DA-A | 14 DA-A | | |
| ARM Action Codes | | | | | | | | | |
| # Subsamples, Dec. | | | | | | | | | |
| Trt Treatment | Rate | Appl | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| No. Name | Unit | Code | | | | | | | |
| 1 SEQUENCE | 2.5 pt/a | A | 86.25 abc | 72.50 cd | 95.00 a | 66.25 a | 66.25 a | 95.00 a | 17.50 b |
| 2 SEQUENCE | 3.0 pt/a | A | 92.50 ab | 82.50 abc | 95.00 a | 72.50 a | 72.50 a | 95.00 a | 15.00 bc |
| 3 SEQUENCE | 4.0 pt/a | A | 86.25 abc | 86.25 ab | 95.00 a | 65.00 a | 65.00 a | 95.00 a | 20.00 ab |
| 4 DUAL MAGNUM | 1.0 pt/a | A | 10.00 d | 10.00 f | 10.00 b | 10.00 b | 10.00 b | 10.00 b | 0.00 e |
| 5 TOUCHDOWN TOTAL | 1.5 pt/a | A | 93.75 a | 87.50 a | 95.00 a | 73.75 a | 73.75 a | 95.00 a | 3.75 de |
| 6 SEQUENCE | 2.5 pt/a | A | 87.50 abc | 81.25 a-d | 95.00 a | 70.00 a | 70.00 a | 95.00 a | 2.50 de |
| KARATE W/ ZEON | 0.025 lb ai/a | A | | | | | | | |
| 7 SEQUENCE | 2.5 pt/a | A | 88.75 abc | 77.50 a-d | 95.00 a | 67.50 a | 67.50 a | 95.00 a | 12.50 bcd |
| CENTRIC | 0.05 lb ai/a | A | | | | | | | |
| 8 SEQUENCE | 2.5 pt/a | A | 81.25 c | 71.25 d | 95.00 a | 73.75 a | 73.75 a | 95.00 a | 30.00 a |
| SEVIN 4F | 0.5 lb ai/a | A | | | | | | | |
| 9 SEQUENCE | 2.5 pt/a | A | 85.00 abc | 72.50 cd | 95.00 a | 67.50 a | 67.50 a | 95.00 a | 5.00 cde |
| LARVIN | 0.4 lb ai/a | A | | | | | | | |
| 10 SEQUENCE | 2.5 pt/a | A | 91.25 abc | 76.25 bcd | 95.00 a | 75.00 a | 75.00 a | 95.00 a | 11.25 bcd |
| LORSBAN 4 EC | 0.5 lb ai/a | A | | | | | | | |
| 11 TOUCHDOWN TOTAL | 12 fl oz/a | A | 82.50 bc | 51.25 e | 95.00 a | 67.50 a | 67.50 a | 95.00 a | 6.25 cde |
| TOUCHDOWN TOTAL | 12 fl oz/a | B | | | | | | | |
| 12 NONTREATED | | | 0.00 d | 0.00 f | 0.00 c | 0.00 b | 0.00 b | 0.00 c | 0.00 e |
| LSD (P=.05) | | | 10.762 | 11.089 | 0.000 | 12.495 | 12.495 | 0.000 | 10.030 |
| Standard Deviation | | | 7.454 | 7.680 | 0.000 | 8.654 | 8.654 | 0.000 | 6.946 |
| CV | | | 10.11 | 11.99 | 0.0 | 14.65 | 14.65 | 0.0 | 67.36 |
| Grand Mean | | | 73.75 | 64.06 | 80.0 | 59.06 | 59.06 | 80.0 | 10.31 |
| Bartlett's X2 | | | 10.445 | 11.164 | 0.0 | 6.961 | 6.961 | 0.0 | 11.78 |
| P(Bartlett's X2) | | | 0.316 | 0.265 | . | 0.641 | 0.641 | . | 0.226 |
| Replicate F | | | 1.225 | 3.518 | 0.000 | 1.046 | 1.046 | 0.000 | 0.961 |
| Replicate Prob(F) | | | 0.3161 | 0.0257 | 1.0000 | 0.3854 | 0.3854 | 1.0000 | 0.4228 |
| Treatment F | | | 75.580 | 57.899 | 0.000 | 34.871 | 34.871 | 0.000 | 6.951 |
| Treatment Prob(F) | | | 0.0001 | 0.0001 | 1.0000 | 0.0001 | 0.0001 | 1.0000 | 0.0001 |

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| Weed Code | SORHA | ECHCG | SEBEX | IPOHG | IPOLA | AMARE | GLXMA | | |
|--------------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|---------|--------|
| Crop Code | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | | |
| Rating Data Type | CONTROL | CONTROL | CONTROL | CONTROL | CONTROL | CONTROL | INJURY | | |
| Rating Unit | % | % | % | % | % | % | % | | |
| Rating Date | 27/Jun/2006 | 27/Jun/2006 | 27/Jun/2006 | 27/Jun/2006 | 27/Jun/2006 | 27/Jun/2006 | 27/Jun/2006 | | |
| Trt-Eval Interval | 26 DA-A | 26 DA-A | 26 DA-A | 26 DA-A | 26 DA-A | 26 DA-A | 26 DA-A | | |
| ARM Action Codes | | | | | | | | | |
| # Subsamples, Dec. | | | | | | | | | |
| Trt Treatment | Rate | Appl | | | | | | | |
| No. Name | Unit | Code | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 1 SEQUENCE | 2.5 pt/a | A | 95.00 a | 80.00 b | 95.00 a | 76.25 a | 76.25 a | 95.00 a | 2.50 a |
| 2 SEQUENCE | 3.0 pt/a | A | 95.00 a | 85.00 ab | 95.00 a | 81.25 a | 81.25 a | 95.00 a | 0.00 a |
| 3 SEQUENCE | 4.0 pt/a | A | 95.00 a | 88.75 ab | 95.00 a | 76.25 a | 76.25 a | 95.00 a | 0.00 a |
| 4 DUAL MAGNUM | 1.0 pt/a | A | 50.00 b | 40.00 c | 57.50 b | 57.50 b | 57.50 b | 57.50 b | 0.00 a |
| 5 TOUCHDOWN TOTAL | 1.5 pt/a | A | 95.00 a | 92.50 a | 95.00 a | 83.75 a | 83.75 a | 95.00 a | 0.00 a |
| 6 SEQUENCE | 2.5 pt/a | A | 95.00 a | 86.25 ab | 95.00 a | 81.25 a | 81.25 a | 92.50 a | 0.00 a |
| KARATE W/ ZEON | 0.025 lb ai/a | A | | | | | | | |
| 7 SEQUENCE | 2.5 pt/a | A | 93.75 a | 82.50 ab | 95.00 a | 78.75 a | 78.75 a | 91.25 a | 0.00 a |
| CENTRIC | 0.05 lb ai/a | A | | | | | | | |
| 8 SEQUENCE | 2.5 pt/a | A | 90.00 a | 78.75 b | 95.00 a | 78.75 a | 78.75 a | 93.75 a | 2.50 a |
| SEVIN 4F | 0.5 lb ai/a | A | | | | | | | |
| 9 SEQUENCE | 2.5 pt/a | A | 91.25 a | 81.25 ab | 95.00 a | 78.75 a | 78.75 a | 95.00 a | 0.00 a |
| LARVIN | 0.4 lb ai/a | A | | | | | | | |
| 10 SEQUENCE | 2.5 pt/a | A | 92.50 a | 80.00 b | 95.00 a | 82.50 a | 82.50 a | 95.00 a | 0.00 a |
| LORSBAN 4 EC | 0.5 lb ai/a | A | | | | | | | |
| 11 TOUCHDOWN TOTAL | 12 fl oz/a | A | 95.00 a | 77.50 b | 95.00 a | 77.50 a | 77.50 a | 95.00 a | 0.00 a |
| TOUCHDOWN TOTAL | 12 fl oz/a | B | | | | | | | |
| 12 NONTREATED | | | 0.00 c | 0.00 d | 0.00 c | 0.00 c | 0.00 c | 0.00 c | 0.00 a |
| LSD (P=.05) | | | 11.895 | 12.158 | 2.084 | 9.200 | 9.200 | 5.667 | 2.992 |
| Standard Deviation | | | 8.238 | 8.420 | 1.443 | 6.371 | 6.371 | 3.925 | 2.072 |
| CV | | | 10.01 | 11.58 | 1.72 | 8.97 | 8.97 | 4.71 | 497.27 |
| Grand Mean | | | 82.29 | 72.71 | 83.96 | 71.04 | 71.04 | 83.33 | 0.42 |
| Bartlett's X2 | | | 17.824 | 22.352 | 0.0 | 7.623 | 7.623 | 4.664 | 0.0 |
| P(Bartlett's X2) | | | 0.001* | 0.013* | . | 0.666 | 0.666 | 0.198 | 0.001* |
| Replicate F | | | 0.358 | 1.930 | 1.000 | 2.754 | 2.754 | 0.631 | 0.647 |
| Replicate Prob(F) | | | 0.7836 | 0.1440 | 0.4051 | 0.0580 | 0.0580 | 0.6001 | 0.5904 |
| Treatment F | | | 49.074 | 39.363 | 1565.364 | 53.799 | 53.799 | 208.205 | 0.882 |
| Treatment Prob(F) | | | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.5658 |

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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| Weed Code | | | | GLXMA | GLXMA | GLXMA |
|--------------------|--------------------|-------|---------|------------|------------|------------|
| Crop Code | | | | YIELD | MOISTURE | YIELD |
| Rating Data Type | | | | LB/PLOT | % | BU/A |
| Rating Unit | | | | 7/Sep/2006 | 7/Sep/2006 | 7/Sep/2006 |
| Rating Date | | | | | | |
| Trt-Eval Interval | | | | | | |
| ARM Action Codes | | | | | | TY1 |
| # Subsamples, Dec. | | | | | | 1 |
| Trt | Treatment | Rate | Unit | Appl | | |
| No. | Name | | | Code | | |
| 1 | SEQUENCE | 2.5 | pt/a | A | 6.03 ab | 14.03 a |
| 2 | SEQUENCE | 3.0 | pt/a | A | 6.58 ab | 13.68 a |
| 3 | SEQUENCE | 4.0 | pt/a | A | 7.08 ab | 39.48 a |
| 4 | DUAL MAGNUM | 1.0 | pt/a | A | 1.83 c | 50.63 a |
| 5 | TOUCHDOWN TOTAL | 1.5 | pt/a | A | 7.95 a | 21.20 a |
| 6 | SEQUENCE | 2.5 | pt/a | A | 7.03 ab | 36.28 a |
| | KARATE W/ ZEON | 0.025 | lb ai/a | A | | |
| 7 | SEQUENCE | 2.5 | pt/a | A | 6.15 ab | 31.83 a |
| | CENTRIC | 0.05 | lb ai/a | A | | |
| 8 | SEQUENCE | 2.5 | pt/a | A | 5.53 b | 30.93 a |
| | SEVIN 4F | 0.5 | lb ai/a | A | | |
| 9 | SEQUENCE | 2.5 | pt/a | A | 5.98 ab | 20.95 a |
| | LARVIN | 0.4 | lb ai/a | A | | |
| 10 | SEQUENCE | 2.5 | pt/a | A | 7.05 ab | 24.73 a |
| | LORSBAN 4 EC | 0.5 | lb ai/a | A | | |
| 11 | TOUCHDOWN TOTAL | 12 | fl oz/a | A | 7.08 ab | 12.20 a |
| | TOUCHDOWN TOTAL | 12 | fl oz/a | B | | |
| 12 | NONTREATED | | | | 1.90 c | 43.03 a |
| | LSD (P=.05) | | | | 1.993 | 35.540 |
| | Standard Deviation | | | | 1.381 | 24.614 |
| | CV | | | | 23.62 | 87.15 |
| | Grand Mean | | | | 5.85 | 28.24 |
| | Bartlett's X2 | | | | 18.307 | 59.535 |
| | P(Bartlett's X2) | | | | 0.075 | 0.001* |
| | Replicate F | | | | 1.129 | 1.121 |
| | Replicate Prob(F) | | | | 0.3515 | 0.3548 |
| | Treatment F | | | | 8.167 | 1.031 |
| | Treatment Prob(F) | | | | 0.0001 | 0.4430 |

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison

OSL.

Column 24: TY1 = 4.353823*[22]*(100-[23])/87