# University of Georgia

**Palmer amaranth response to various soil-applied and directed herbicides.**

Trial ID: C6-06 Study Dir.: Stanley Culpepper
Location: Attapulgus (pig fld) Investigator: Stanley Culpepper

Reps: 4 Plots: 9 by 25 feet
Spray vol: 14.8 gal/ac Mix size: 1 liters (min 1.1575)

| Trt No. | Treatment Name | Form Conc | Form Unit | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | Amt Product to Measure | Plot No. By Rep 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Treflan | 4 | | L | 0.75 | LB A/A | PPI | A | 12.67 ml/mx | 101 | 222 | 315 | 408 |
| 2 | Reflex | 2 | | L | 0.25 | LB A/A | PPI | A | 8.445 ml/mx | 102 | 219 | 318 | 401 |
| 3 | Cotoran | 4 | | L | 1 | LB A/A | PPI | A | 16.89 ml/mx | 103 | 231 | 308 | 431 |
| 4 | Prowl H20 | 3.8 | | SC | 1 | LB A/A | PRE | B | 17.78 ml/mx | 104 | 216 | 327 | 419 |
| 5 | Dual Magnum | 7.62 | | L | 1 | LB A/A | PRE | B | 8.866 ml/mx | 105 | 206 | 319 | 427 |
| 6 | Stalwart | 8 | | L | 1.05 | LB A/A | PRE | B | 8.867 ml/mx | 106 | 207 | 324 | 415 |
| 7 | Intrro | 4 | | L | 1 | LB A/A | PRE | B | 16.89 ml/mx | 107 | 202 | 306 | 407 |
| 8 | Cotoran | 4 | | L | 1 | LB A/A | PRE | B | 16.89 ml/mx | 108 | 210 | 303 | 409 |
| 9 | Direx | 4 | | L | 1 | LB A/A | PRE | B | 16.89 ml/mx | 109 | 211 | 332 | 424 |
| 10 | Caparol | 4 | | L | 1 | LB A/A | PRE | B | 16.89 ml/mx | 110 | 215 | 316 | 432 |
| 11 | Linex | 4 | | L | 1 | LB A/A | PRE | B | 16.89 ml/mx | 111 | 229 | 302 | 410 |
| 12 | Cotoran | 4 | | L | 1.5 | LB A/A | PRE | B | 25.34 ml/mx | 112 | 227 | 325 | 411 |
| 13 | Direx | 4 | | L | 1.5 | LB A/A | PRE | B | 25.34 ml/mx | 113 | 220 | 313 | 417 |
| 14 | Caparol | 4 | | L | 1.5 | LB A/A | PRE | B | 25.34 ml/mx | 114 | 213 | 309 | 421 |
| 15 | Linex | 4 | | L | 1.5 | LB A/A | PRE | B | 25.34 ml/mx | 115 | 225 | 322 | 426 |
| 16 | Valor | 4 | | L | 0.0475 | LB A/A | PRE | B | 0.8023 ml/mx | 116 | 228 | 330 | 403 |
| 17 | Valor | 4 | | L | 0.0945 | LB A/A | PRE | B | 1.596 ml/mx | 117 | 223 | 305 | 429 |
| 18 | Reflex | 2 | | L | 0.125 | LB A/A | PRE | B | 4.223 ml/mx | 118 | 230 | 317 | 413 |
| 19 | Reflex | 2 | | L | 0.1875 | LB A/A | PRE | B | 6.334 ml/mx | 119 | 214 | 312 | 420 |
| 20 | Reflex | 2 | | L | 0.25 | LB A/A | PRE | B | 8.445 ml/mx | 120 | 217 | 328 | 414 |
| 21 | Reflex | 2 | | L | 0.375 | LB A/A | PRE | B | 12.67 ml/mx | 121 | 218 | 314 | 406 |
| 22 | Envoke | 75 | | WDG | 0.0047 | LB A/A | PRE | B | .05074 g/mx | 122 | 203 | 321 | 428 |
| 23 | Staple LX | 3.2 | | L | 0.043 | LB A/A | PRE | B | 0.9078 ml/mx | 123 | 208 | 304 | 412 |
| 24 | Staple LX | 3.2 | | L | 0.0525 | LB A/A | PRE | B | 1.108 ml/mx | 124 | 226 | 331 | 423 |
| 25 | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | 4-lf | C | 11.26 ml/mx | 125 | 209 | 310 | 425 |
| | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | layby | D | 11.26 ml/mx | | | | |
| | Valor | 51 | | WDG | 0.063 | LB A/A | layby | D | 1.0 g/mx | | | | |
| 26 | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | 4-lf | C | 11.26 ml/mx | 126 | 204 | 323 | 418 |
| | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | layby | D | 11.26 ml/mx | | | | |
| | Reflex | 2 | | L | 0.25 | LB A/A | layby | D | 8.445 ml/mx | | | | |
| 27 | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | 4-lf | C | 11.26 ml/mx | 127 | 221 | 307 | 405 |
| | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | layby | D | 11.26 ml/mx | | | | |
| | Direx | 4 | | L | 0.75 | LB A/A | layby | D | 12.67 ml/mx | | | | |
| 28 | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | 4-lf | C | 11.26 ml/mx | 128 | 224 | 311 | 416 |
| | Dual Magnum | 7.62 | | L | 1 | LB A/A | 4-lf | C | 8.866 ml/mx | | | | |
| 29 | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | 4-lf | C | 11.26 ml/mx | 129 | 205 | 320 | 422 |
| | Stalwart | 8 | | L | 1.05 | LB A/A | 4-lf | C | 8.867 ml/mx | | | | |
| 30 | Roundup WeatherMax | 4.5 | | L | 0.75 | LB A/A | 4-lf | C | 11.26 ml/mx | 130 | 232 | 301 | 402 |
| | Intrro | 4 | | L | 1 | LB A/A | 4-lf | C | 16.89 ml/mx | | | | |
| 31 | Non-treated | | | | | | | | | 131 | 201 | 326 | 404 |
| 32 | Prowl H20 | 3.8 | | SC | 1 | LB A/A | PRE | B | 17.78 ml/mx | 132 | 212 | 329 | 430 |
| | Reflex | 2 | | L | 0.25 | LB A/A | PRE | B | 8.445 ml/mx | | | | |

Sort Order: Treatment

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Reps: 4 Plots: 9 by 25 feet
Spray vol: 14.8 gal/ac Mix size: 1 liters (min 1.1575)

| Trt No. | Treatment Name | Form Conc | Form Unit | Form Type | Form Rate | Unit | Rate Stg | Grow Code | Appl to | Amt Measure | Product 1 | Plot No. By Rep 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Product quantities required for listed treatments and applications in one trial:

| Amount* | Unit | Treatment Name | Form Conc | Form Type | Lot Code |
|---|---|---|---|---|---|
| 15.834 | ml | Treflan | 4 | L | |
| 71.255 | ml | Reflex | 2 | L | |
| 73.894 | ml | Cotoran | 4 | L | |
| 44.448 | ml | Prowl H20 | 3.8 | SC | |
| 22.165 | ml | Dual Magnum | 7.62 | L | |
| 22.168 | ml | Stalwart | 8 | L | |
| 42.225 | ml | Intrro | 4 | L | |
| 68.616 | ml | Direx | 4 | L | |
| 52.782 | ml | Caparol | 4 | L | |
| 52.782 | ml | Linex | 4 | L | |
| 2.998 | ml | Valor | 4 | L | |
| 0.063 | g | Envoke | 75 | WDG | |
| 2.520 | ml | Staple LX | 3.2 | L | |
| 126.676 | ml | Roundup WeatherMax | 4.5 | L | |
| 1.250 | g | Valor | 51 | WDG | |

* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1 liters (mix size basis).
* Product amount calculations increased 25 % for overage adjustment.

## Trial Comments

OBJECTIVE: Determine the most effective residual herbicide for the control of Palmer amaranth and other weeds.

Cotton Response:
1. Valor PRE was the only herbicide treatment causing unacceptable injury at 18 DAT (25 to 40%).

Palmer amaranth control:
1. At 18 DAT, all at plant herbicide treatments provided excellent control.
2. By 27 DAT, all at plant herbicide treatments provided excellent control with Caparol and Envoke tending to be the least effective options.
3. By 39 DAT, Treflan PPI, Reflex, Prowl + Reflex, Valor, Staple and Dual Magnum were still providing excellent control. At 1 lb ai/A, Direx was more effective than Cotoran, Caparol, or Linex. Dual Magnum was more effective than Stalwart.
4. By 75 DAT, Treflan PPI, Reflex, Prowl + Reflex, and Valor still provided excellent control. POST over-the-top or directed treatments were less effective than these at plant herbicide options because the residual herbicide was captured by the emerged pigweed before hitting the soil. Additionally, treatments that included Reflex or Direx directed at layby had large Palmer at time of application with applications not completely covering the emerged Palmer; the Direx mixture was more effective than the Reflex mixture in this situation.

Broadleaf signalgrass:
1. Early season control was excellent with Treflan, Prowl, Prowl + Reflex, Reflex and glyphosate POST. Good control was noted with Reflex, Cotoran and Direx. Cotoran PPI was more effective than applied PRE.
2. Ratings had to stop after 27 DAT because Palmer in some plots was so bad ratings could not be made.

Sicklepod:
1. Glyphosate POST was clearly the most effective treatment but greater than 80% control was noted 39 DAT with Cotoran, Direx, and Staple. Cotoran PPI was more effective than applied PRE.
2. Ratings had to stop after 39 DAT because Palmer in some plots was so bad ratings could not be made.

Smallflower morningglory:
1. At 39 DAT, Cotoran, Direx, Valor, Reflex and Staple provided excellent control along with glyphosate POST.

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2. By 75 d, Staple and the high rates of Reflex, Valor or Direx generally provided the greatest suppression of 45 to 65% control; however, POST glyphosate treatments were clearly the most effective options.

CONCLUSIONS:
1. PPI applications of yellow herbicides should be recommended for Palmer control.
2. Reflex PRE is as effective as applied PPI.
3. Reflex, Valor, Dual Magnum, and the subsititued urea herbicides offer growers potentially effective programs for the control of Palmer amaranth.

GENERAL COMMENTS:
1. Soil was moist at time of application and rainfall of over 0.75 inch occurred within 48 hours after applying at plant treatments.

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**Palmer amaranth response to various soil-applied and directed herbicides.**

Trial ID: C6-06 Study Dir.: Stanley Culpepper
Location: Attapulgus (pig fld) Investigator: Stanley Culpepper

| Trt No. | Treatment Name | Rate | Rate Unit | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| Weed Code | | | | GOSHI | GOSHI | AMAPA | AMAPA | AMAPA | AMAPA | BRAPP |
| Crop Code | | | | | | | | | | |
| Rating Data Type | | | | injury | injury | control | control | control | control | control |
| Rating Unit | | | | % | % | % | % | % | % | % |
| Rating Date | | | | Jun-06-06 | Jun-15-06 | Jun-06-06 | Jun-15-06 | Jun-27-06 | Aug-02-06 | Aug-02-06 |
| Assessed By | | | | SC | SC | SC | SC | AD | AD | SC |
| Trt-Eval Interval | | | | 18 DA-A | 27 DA-A | 18 DA-A | 27 DA-A | 39 DA-A | 75 DA-A | 75 DA-A |
| 1 | Treflan | 0.75 | LB A/A | 0 c | 1 e | 99 a | 99 a | 98 ab | 94 ab | 99 a |
| 2 | Reflex | 0.25 | LB A/A | 0 c | 0 e | 99 a | 99 a | 100 a | 96 ab | 95 abc |
| 3 | Cotoran | 1 | LB A/A | 0 c | 1 e | 96 bc | 96 ab | 70 hi | 0 i | 90 a-d |
| 4 | Prowl H20 | 1 | LB A/A | 0 c | 0 e | 99 a | 98 a | 84 d-g | 0 i | 99 a |
| 5 | Dual Magnum | 1 | LB A/A | 1 c | 0 e | 99 a | 99 a | 98 ab | 44 g | 95 abc |
| 6 | Stalwart | 1.05 | LB A/A | 0 c | 2 e | 99 a | 96 ab | 72 ghi | 0 i | 94 abc |
| 7 | Intrro | 1 | LB A/A | 2 c | 3 e | 99 a | 96 ab | 55 j | 0 i | 88 a-d |
| 8 | Cotoran | 1 | LB A/A | 0 c | 0 e | 99 a | 97 ab | 60 ij | 0 i | 81 b-e |
| 9 | Direx | 1 | LB A/A | 1 c | 3 e | 99 a | 95 ab | 80 fgh | 0 i | 76 def |
| 10 | Caparol | 1 | LB A/A | 0 c | 0 e | 98 a | 90 c | 55 j | 0 i | 88 a-d |
| 11 | Linex | 1 | LB A/A | 0 c | 3 e | 98 ab | 97 ab | 68 i | 0 i | 67 ef |
| 12 | Cotoran | 1.5 | LB A/A | 1 c | 1 e | 99 a | 98 a | 82 efg | 0 i | 85 a-d |
| 13 | Direx | 1.5 | LB A/A | 0 c | 1 e | 99 a | 98 a | 90 a-f | 62 ef | 87 a-d |
| 14 | Caparol | 1.5 | LB A/A | 0 c | 4 de | 99 a | 97 ab | 65 ij | 0 i | 87 a-d |
| 15 | Linex | 1.5 | LB A/A | 2 c | 0 e | 99 a | 99 a | 87 a-f | 16 h | 76 def |
| 16 | Valor | 0.0475 | LB A/A | 25 b | 18 b | 99 a | 99 a | 100 a | 86 bc | 86 a-d |
| 17 | Valor | 0.0945 | LB A/A | 39 a | 39 a | 99 a | 99 a | 100 a | 92 ab | 87 a-d |
| 18 | Reflex | 0.125 | LB A/A | 0 c | 0 e | 99 a | 99 a | 96 a-d | 95 ab | 88 a-d |
| 19 | Reflex | 0.1875 | LB A/A | 0 c | 1 e | 99 a | 99 a | 100 a | 95 ab | 89 a-d |
| 20 | Reflex | 0.25 | LB A/A | 4 c | 4 de | 99 a | 99 a | 100 a | 98 a | 97 ab |
| 21 | Reflex | 0.375 | LB A/A | 0 c | 4 e | 99 a | 99 a | 97 abc | 97 a | 92 abc |
| 22 | Envoke | 0.0047 | LB A/A | 2 c | 0 e | 94 c | 93 bc | 65 ij | 0 i | 65 f |
| 23 | Staple LX | 0.043 | LB A/A | 3 c | 0 e | 99 a | 99 a | 93 a-e | 58 f | 88 a-d |
| 24 | Staple LX | 0.0525 | LB A/A | 1 c | 2 e | 99 a | 99 a | 93 a-e | 64 ef | 80 cde |
| 25 | Roundup WeatherMax | 0.75 | LB A/A | 0 c | 6 de | 0 d | 99 a | 87 b-f | 78 cd | 0 g |
| | Roundup WeatherMax | 0.75 | LB A/A | | | | | | | |
| | Valor | 0.063 | LB A/A | | | | | | | |
| 26 | Roundup WeatherMax | 0.75 | LB A/A | 0 c | 6 de | 0 d | 99 a | 85 c-f | 38 g | 0 g |
| | Roundup WeatherMax | 0.75 | LB A/A | | | | | | | |
| | Reflex | 0.25 | LB A/A | | | | | | | |
| 27 | Roundup WeatherMax | 0.75 | LB A/A | 0 c | 7 de | 0 d | 99 a | 83 efg | 76 cd | 0 g |
| | Roundup WeatherMax | 0.75 | LB A/A | | | | | | | |
| | Direx | 0.75 | LB A/A | | | | | | | |
| 28 | Roundup WeatherMax | 0.75 | LB A/A | 0 c | 17 bc | 0 d | 99 a | 94 a-e | 70 de | 0 g |
| | Dual Magnum | 1 | LB A/A | | | | | | | |
| 29 | Roundup WeatherMax | 0.75 | LB A/A | 0 c | 11 cd | 0 d | 99 a | 97 abc | 55 f | 0 g |
| | Stalwart | 1.05 | LB A/A | | | | | | | |
| 30 | Roundup WeatherMax | 0.75 | LB A/A | 0 c | 14 bc | 0 d | 99 a | 91 a-f | 60 ef | 0 g |
| | Intrro | 1 | LB A/A | | | | | | | |
| 31 | Non-treated | | | 0 c | 0 e | 0 d | 0 d | 0 k | 0 i | 0 g |

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| Weed Code | | | | | AMAPA | AMAPA | AMAPA | AMAPA | BRAPP |
|---|---|---|---|---|---|---|---|---|---|
| Crop Code | | | GOSHI | GOSHI | | | | | |
| Rating Data Type | | | injury | injury | control | control | control | control | control |
| Rating Unit | | | % | % | % | % | % | % | % |
| Rating Date | | | Jun-06-06 | Jun-15-06 | Jun-06-06 | Jun-15-06 | Jun-27-06 | Aug-02-06 | Aug-02-06 |
| Assessed By | | | SC | SC | SC | SC | AD | AD | SC |
| Trt-Eval Interval | | | 18 DA-A | 27 DA-A | 18 DA-A | 27 DA-A | 39 DA-A | 75 DA-A | 75 DA-A |
| Trt No. | Treatment Name | Rate | Rate Unit | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32 | Prowl H20 | 1 | LB A/A | 1 c | 3 e | 99 a | 99 a | 100 a | 95 ab | 99 a |
| | Reflex | 0.25 | LB A/A | | | | | | | |
| LSD (P=.05) | | | | 4.7 | 6.5 | 2.4 | 3.9 | 10.7 | 9.3 | 12.9 |
| Standard Deviation | | | | 3.3 | 4.6 | 1.7 | 2.8 | 7.7 | 6.6 | 9.2 |
| CV | | | | 128.91 | 98.74 | 2.19 | 2.97 | 9.29 | 14.42 | 13.54 |
| Bartlett's X2 | | | | 22.441 | 39.593 | 6.526 | 23.108 | 62.38 | 37.607 | 31.558 |
| P(Bartlett's X2) | | | | 0.021* | 0.008* | 0.089 | 0.027* | 0.001* | 0.007* | 0.065 |

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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| Weed Code | | | | BRAPP | CASOB | CASOB | IAQTA | IAQTA | IAQTA |
|---|---|---|---|---|---|---|---|---|---|
| Crop Code | | | | | | | | | |
| Rating Data Type | | | | control | control | control | control | control | control |
| Rating Unit | | | | % | % | % | % | % | % |
| Rating Date | | | | Jun-15-06 | Jun-15-06 | Jun-27-06 | Jun-15-06 | Jun-27-06 | Aug-02-06 |
| Assessed By | | | | SC | SC | AD | SC | AD | AD |
| Trt-Eval Interval | | | | 27 DA-A | 27 DA-A | 39 DA-A | 27 DA-A | 39 DA-A | 75 DA-A |
| Trt No. | Treatment Name | Rate | Rate Unit | 8 | 9 | 10 | 11 | 12 | 13 |
| 1 | Treflan | 0.75 | LB A/A | 99 a | 45 j | 48 i | 78 b | 78 cde | 0 e |
| 2 | Reflex | 0.25 | LB A/A | 90 a-d | 66 ghi | 59 ghi | 98 a | 86 abc | 0 e |
| 3 | Cotoran | 1 | LB A/A | 86 a-f | 92 a-d | 83 cde | 97 a | 97 a | 0 e |
| 4 | Prowl H20 | 1 | LB A/A | 99 a | 69 f-i | 60 ghi | 46 de | 50 g | 0 e |
| 5 | Dual Magnum | 1 | LB A/A | 88 a-e | 61 hij | 66 fgh | 53 d | 60 fg | 0 e |
| 6 | Stalwart | 1.05 | LB A/A | 76 c-h | 65 ghi | 70 e-h | 50 de | 51 g | 0 e |
| 7 | Intrro | 1 | LB A/A | 72 e-h | 58 ij | 53 i | 42 e | 53 g | 0 e |
| 8 | Cotoran | 1 | LB A/A | 71 fgh | 76 b-i | 67 fgh | 96 a | 95 a | 0 e |
| 9 | Direx | 1 | LB A/A | 62 hi | 82 a-g | 75 def | 96 a | 93 a | 0 e |
| 10 | Caparol | 1 | LB A/A | 74 d-h | 77 b-i | 68 fgh | 96 a | 79 bcd | 0 e |
| 11 | Linex | 1 | LB A/A | 44 j | 68 ghi | 60 ghi | 68 c | 69 def | 0 e |
| 12 | Cotoran | 1.5 | LB A/A | 75 d-h | 91 a-e | 83 cde | 97 a | 96 a | 0 e |
| 13 | Direx | 1.5 | LB A/A | 87 a-f | 96 ab | 86 a-d | 98 a | 90 abc | 65 b |
| 14 | Caparol | 1.5 | LB A/A | 76 c-h | 84 a-g | 72 efg | 98 a | 86 abc | 0 e |
| 15 | Linex | 1.5 | LB A/A | 66 ghi | 71 e-i | 79 c-f | 91 a | 70 def | 0 e |
| 16 | Valor | 0.0475 | LB A/A | 76 c-h | 76 b-i | 59 ghi | 98 a | 95 a | 0 e |
| 17 | Valor | 0.0945 | LB A/A | 87 a-f | 79 a-h | 67 fgh | 99 a | 98 a | 45 c |
| 18 | Reflex | 0.125 | LB A/A | 80 b-g | 73 d-i | 58 hi | 92 a | 77 cde | 0 e |
| 19 | Reflex | 0.1875 | LB A/A | 87 a-f | 73 d-i | 70 e-h | 98 a | 90 abc | 0 e |
| 20 | Reflex | 0.25 | LB A/A | 92 abc | 75 c-i | 66 fgh | 98 a | 91 ab | 0 e |
| 21 | Reflex | 0.375 | LB A/A | 95 ab | 65 ghi | 70 e-h | 98 a | 95 a | 46 c |
| 22 | Envoke | 0.0047 | LB A/A | 54 ij | 91 a-e | 73 efg | 65 c | 65 ef | 0 e |
| 23 | Staple LX | 0.043 | LB A/A | 75 d-h | 93 abc | 86 bcd | 99 a | 99 a | 55 bc |
| 24 | Staple LX | 0.0525 | LB A/A | 77 c-h | 88 a-f | 90 abc | 98 a | 98 a | 63 b |
| 25 | Roundup WeatherMax | 0.75 | LB A/A | 99 a | 99 a | 99 ab | 99 a | 98 a | 98 a |
| | Roundup WeatherMax | 0.75 | LB A/A | | | | | | |
| | Valor | 0.063 | LB A/A | | | | | | |
| 26 | Roundup WeatherMax | 0.75 | LB A/A | 99 a | 99 a | 98 ab | 99 a | 100 a | 98 a |
| | Roundup WeatherMax | 0.75 | LB A/A | | | | | | |
| | Reflex | 0.25 | LB A/A | | | | | | |
| 27 | Roundup WeatherMax | 0.75 | LB A/A | 99 a | 99 a | 99 ab | 99 a | 100 a | 98 a |
| | Roundup WeatherMax | 0.75 | LB A/A | | | | | | |
| | Direx | 0.75 | LB A/A | | | | | | |
| 28 | Roundup WeatherMax | 0.75 | LB A/A | 99 a | 99 a | 98 ab | 99 a | 100 a | 100 a |
| | Dual Magnum | 1 | LB A/A | | | | | | |
| 29 | Roundup WeatherMax | 0.75 | LB A/A | 99 a | 99 a | 96 ab | 99 a | 100 a | 100 a |
| | Stalwart | 1.05 | LB A/A | | | | | | |
| 30 | Roundup WeatherMax | 0.75 | LB A/A | 99 a | 99 a | 100 a | 99 a | 100 a | 96 a |
| | Intrro | 1 | LB A/A | | | | | | |
| 31 | Non-treated | | | 0 k | 0 k | 0 j | 0 f | 0 h | 0 e |
| 32 | Prowl H20 | 1 | LB A/A | 99 a | 66 ghi | 60 ghi | 99 a | 95 a | 23 d |
| | Reflex | 0.25 | LB A/A | | | | | | |
| LSD (P=.05) | | | | 13.6 | 16.7 | 11.5 | 9.6 | 11.3 | 9.9 |
| Standard Deviation | | | | 9.7 | 11.9 | 8.2 | 6.9 | 8.1 | 7.1 |
| CV | | | | 12.07 | 15.46 | 11.37 | 8.0 | 9.76 | 25.53 |
| Bartlett's X2 | | | | 40.953 | 33.508 | 66.001 | 96.81 | 27.824 | 26.633 |
| P(Bartlett's X2) | | | | 0.006* | 0.094 | 0.001* | 0.001* | 0.268 | 0.002* |

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| Weed Code | BRAPP | CASOB | CASOB | IAQTA | IAQTA | IAQTA |
|---|---|---|---|---|---|---|
| Crop Code | | | | | | |
| Rating Data Type | control | control | control | control | control | control |
| Rating Unit | % | % | % | % | % | % |
| Rating Date | Jun-15-06 | Jun-15-06 | Jun-27-06 | Jun-15-06 | Jun-27-06 | Aug-02-06 |
| Assessed By | SC | SC | AD | SC | AD | AD |
| Trt-Eval Interval | 27 DA-A | 27 DA-A | 39 DA-A | 27 DA-A | 39 DA-A | 75 DA-A |

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

# University of Georgia

**Palmer amaranth response to various soil-applied and directed herbicides.**

Trial ID: C6-06 Study Dir.: Stanley Culpepper
Location: Attapulgus (pig fld) Investigator: Stanley Culpepper

## GENERAL TRIAL INFORMATION

**Study Director:** Stanley Culpepper **Title:** Ext. Weed Science
**Affiliation:** University of Georgia
**Postal Code:** 31794

**Investigator:** Stanley Culpepper **Title:** Ext. Weed Science
**Affiliation:** University of Georgia
**Postal Code:** 31794

## TRIAL LOCATION

**City:** Attapulgus **Trial Status:** completed
**State/Prov.:** Ga **Trial Reliability:** excellent
**Postal Code:** _____ **Initiation Date:** May-19-06
**Country:** USA **Planned Completion Date:** _____
**E-Longitude of LL Corner °:** _____ **N-Latitude of LL Corner °:** _____
**Altitude of LL Corner:** _____ **Unit:** _____ **Angle y-axis to North °:** _____
**Directions:**

## COOPERATOR/LANDOWNER

**Cooperator:** _____ **Country:** _____
**Org:** _____ **Phone No:** _____
**Address 1:** _____ **Fax No:** _____
**Address 2:** _____
**City:** _____
**State/Prov:** _____
**Postal Code:** _____

**Conducted Under GLP (Y/N):** N **Conducted Under GEP (Y/N):** N
**Guidelines:** _____ **Guideline Description:** _____

**Objective:**

**Conclusions:**

## CROP AND WEED DESCRIPTION

| Weed | Code | Common Name | Scientific Name |
|---|---|---|---|
| 1. | AMAPA | Palmer amaranth | |
| 2. | BRAPP | broadleaf signalgrass | |
| 3. | CASOB | sicklepod | |
| 4. | IAQTA | smallflower morningglory | |

**Crop 1:** GOSHI cotton **Variety:** WR 485 Flex
**Planting Date:** May-19-06 **Planting Method:** seeded
**Rate:** 3 ft **Depth:** 0.5 in **Perennial Age:** ____ _____
**Row Spacing:** 36 inch **Spacing Within Row:** 4 inch **Seed Bed:** flat
**Soil Temperature:** 80 F **Soil Moisture:** irrigated **Emergence Date:** May-24-06

## SITE AND DESIGN

**Plot Width, Unit:** 9 FT **Plot Length, Unit:** 25 FT **Reps:** 4
**Site Type:** Attapulgus research station
**Tillage Type:** conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

**Trial Initiation Comments:**

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

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## MAINTENANCE

**Field Prep./Maintenance:**

| No. | Date | Maintenance Treatment Name | Form Conc | Form Unit | Form Type | Rate | Rate Unit |
|---|---|---|---|---|---|---|---|
| 1. | | | | | | | |

## SOIL DESCRIPTION

**% Sand:** 84 **% OM:** 6 **Texture:** Loamy sand
**% Silt:** 8 **pH:** 1.3 **Soil Name:** _____
**% Clay:** 8 **CEC:** _____ **Fert. Level:** _____

## ADDITIONAL MEASURED ELEMENTS

| Element | Quantity | Unit |
|---|---|---|
| | | |

## MOISTURE CONDITIONS

| | Date | Time | Amount | Unit | Type | Interval | Unit |
|---|---|---|---|---|---|---|---|
| 1. | | | | | | | |

**Overall Moisture Conditions:** _____
**Closest Weather Station:** _____ **Distance:** _____ **Unit:** __

## APPLICATION DESCRIPTION

| | A | B | C | D |
|---|---|---|---|---|
| **Application Date:** | May-19-06 | May-19-06 | Jun-06-06 | Jul-06-06 |
| **Time of Day:** | 7:00am | 10:00am | 2:00PM | 11:00 am |
| **Application Method:** | broadcast | broadcast | broadcast | broadcast |
| **Application Timing:** | PPI | PRE | 4-lf | layby |
| **Applic. Placement:** | incorpora | on soil | overtop | directed |
| **Air Temp., Unit:** | 75 F | 75 F | 85 F | 88 F |
| **% Relative Humidity:** | 49 | 49 | 31 | 68 |
| **Wind Velocity, Unit:** | | | | |
| **Dew Presence (Y/N):** | n | n | n | n |
| **Water Hardness:** | | | | |
| **Soil Temp., Unit:** | 80 F | 80 F | 92 F | 92 F |
| **Soil Moisture:** | moist | moist | moist | wet |
| **% Cloud Cover:** | 0 | 0 | 0 | 0 |

## CROP STAGE AT EACH APPLICATION

| | A | B | C | D |
|---|---|---|---|---|
| **Crop 1 Code, Stage:** | GOSHI PPI | GOSHI PRE | GOSHI 4-leaf | GOSHI layby |
| **Stage Scale:** | not up | not up | 3-4 leaf | 12 leaf |
| **Height, Unit:** | 0 inch | 0 inch | 4.5 inch | 20 inch |

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**WEED STAGE AT EACH APPLICATION**

| | A | B | C | D |
|---|---|---|---|---|
| **Weed 1 Code, Stage:** | AMAPA PPI | AMAPA PRE | AMAPA 4-lf | AMAPA layby |
| **Stage Scale:** | not up | not up | < 4inch | up to 24" |
| **Density, Unit:** | 0 ydsq | 0 ydsq | 10 ydsq | 12 ydsq |
| **Weed 2 Code, Stage:** | BRAPP PPI | BRAPP PRE | BRAPP 4-lf | BRAPP layby |
| **Stage Scale:** | not up | not up | < 4inch | up to 5" |
| **Density, Unit:** | 0 ydsq | 0 ydsq | 8 ydsq | 8 ydsq |
| **Weed 3 Code, Stage:** | CASOB PPI | CASOB PRE | CASOB 4-lf | CASOB layby |
| **Stage Scale:** | not up | not up | < 4inch | up to 5" |
| **Density, Unit:** | 0 ydsq | 0 ydsq | 6 ydsq | 6 ydsq |
| **Weed 4 Code, Stage:** | IAQTA PPI | IAQTA PRE | IAQTA 4-lf | IAQTA layby |
| **Stage Scale:** | not up | not up | < 4inch | up to 5" |
| **Density, Unit:** | 0 ydsq | 0 ydsq | 6 ydsq | 6 ydsq |

**APPLICATION EQUIPMENT**

| | A | B | C | D |
|---|---|---|---|---|
| **Appl. Equipment:** | backpack | backpack | backpack | backpack |
| **Operating Pressure:** | 23 | 23 | 23 | 18 |
| **Nozzle Type:** | flat fan | flat fan | flat fan | floodjet |
| **Nozzle Size:** | 11002 | 11002 | 11002 | TK2 |
| **Nozzle Spacing, Unit:** | 18 inch | 18 inch | 18 inch | 36 inch |
| **Nozzles/Row:** | 2 | 2 | 2 | 3 |
| **Band Width, Unit:** | | | | |
| **Boom Length, Unit:** | 4.5 ft | 4.5 ft | 4.5 ft | 4.5 ft |
| **Boom Height, Unit:** | 15 inch | 15 inch | 15 inch | 10 inch |
| **Ground Speed, Unit:** | 3 mph | 3 mph | 3 mph | 3 mph |
| **Incorporation Equip.:** | | | | |
| **Hours to Incorp.:** | | | | |
| **Incorp. Depth, Unit:** | | | | |
| **Carrier:** | water | water | water | water |
| **Spray Volume, Unit:** | 14.8 GPA | 14.8 GPA | 14.8 GPA | 14.8 gpa |
| **Spray pH:** | | | | |
| **Propellant:** | CO2 | CO2 | CO2 | CO2 |
| **Tank Mix (Y/N):** | Y | Y | Y | Y |

| Trt No | Treatment Application Comment |
|---|---|
| | |