

University of Georgia

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| PALMER AMARANTH CONTROL WITH TOUGH (NON-CROP) | |
| Trial ID: PE-19-18 | Study Dir.: DENNIS LONG |
| Location: PONDER FARM | Investigator: Eric P. Prostko |

Reps: 4 Plots: 6 by 25 feet
 Spray vol: 15 GAL/AC Mix Size: 1.5 L (total for 4 plots; minimum=0.782 L)

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Grow Unit | Appl Stg | Appl Code | Amt Product to Measure | Rep | | | |
|---------|-----------------------|-----------|-----------|------|-----------|----------|-----------|------------------------|-----|-----|-----|-----|
| | | | | | | | | | 1 | 2 | 3 | 4 |
| 1 | NO TOUGH NO 2,4-DB | | | | | | | | 101 | 203 | 308 | 412 |
| 2 | NO TOUGH 2,4-DB | 1.75 | SL | 18.0 | oz/a | POST | A | 14.06 mL/mx | 102 | 207 | 312 | 401 |
| 3 | TOUGH NO 2,4-DB | 5 | EC | 6.0 | oz/a | POST | A | 4.687 mL/mx | 103 | 204 | 310 | 405 |
| 4 | TOUGH 2,4-DB | 5 | EC | 6.0 | oz/a | POST | A | 4.687 mL/mx | 104 | 212 | 305 | 403 |
| | | 1.75 | SL | 18.0 | oz/a | POST | A | 14.06 mL/mx | | | | |
| 5 | TOUGH NO 2,4-DB | 5 | EC | 9.0 | oz/a | POST | A | 7.03 mL/mx | 105 | 202 | 309 | 402 |
| 6 | TOUGH 2,4-DB | 5 | EC | 9.0 | oz/a | POST | A | 7.03 mL/mx | 106 | 211 | 307 | 404 |
| | | 1.75 | SL | 18.0 | oz/a | POST | A | 14.06 mL/mx | | | | |
| 7 | TOUGH NO 2,4-DB | 5 | EC | 12.0 | oz/a | POST | A | 9.374 mL/mx | 107 | 208 | 306 | 407 |
| 8 | TOUGH 2,4-DB | 5 | EC | 12.0 | oz/a | POST | A | 9.374 mL/mx | 108 | 209 | 311 | 410 |
| | | 1.75 | SL | 18.0 | oz/a | POST | A | 14.06 mL/mx | | | | |
| 9 | TOUGH NO 2,4-DB | 5 | EC | 18.0 | oz/a | POST | A | 14.06 mL/mx | 109 | 206 | 303 | 409 |
| 10 | TOUGH 2,4-DB | 5 | EC | 18.0 | oz/a | POST | A | 14.06 mL/mx | 110 | 205 | 301 | 408 |
| | | 1.75 | SL | 18.0 | oz/a | POST | A | 14.06 mL/mx | | | | |
| 11 | TOUGH NO 2,4-DB | 5 | EC | 24.0 | oz/a | POST | A | 18.75 mL/mx | 111 | 201 | 304 | 406 |
| 12 | TOUGH 2,4-DB | 5 | EC | 24.0 | oz/a | POST | A | 18.75 mL/mx | 112 | 210 | 302 | 411 |
| | | 1.75 | SL | 18.0 | oz/a | POST | A | 14.06 mL/mx | | | | |

Sort Order: Treatment

Trial Comments

BARE-GROUND - NON CROP
 USED NIS @ 0.25% V/V (3.75 MLS/1500 MLS) FOR ALL TREATMENTS (INDUCE - HELENA)
 LAST TILLAGE ON APRIL 5, 2018
 SELECT MAX @ 16 OZ/A + RELIABLE @ 1% V/V - APRIL 25, 2018

PALMER AMARANTH PLANT HEIGHTS ON MAY 4, 2018

LOW = 0.25" TALL
 HIGH: 5.0" TALL
 AVG (35 PLANTS) = 2" TALL

MISSING DATA IN PLOTS 310, 311, 312 DUE TO LOW AMAPA POPULATION.

SUMMARY:

1) PALMER AMARANTH POPULATION IN THIS TEST WAS VARIABLE. HOWEVER, THE HIGHEST RATE OF TOUGH (24 OZ/A) + 2,4-DB DID NOT PROVIDE ACCEPTABLE CONTROL OF PALMER AMARANTH AT 14 DAT (<45%).

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| WEED STAGE AT EACH APPLICATION | | | | | | | |
|--------------------------------|-----------------------|-------|-------|-------|-------|-------|-------|
| | | A | B | C | D | E | F |
| Weed 1 | Stage: AMAPA REFER TO | _____ | _____ | _____ | _____ | _____ | _____ |
| | Stage Scale: | _____ | _____ | _____ | _____ | _____ | _____ |
| | Density, Unit: | _____ | _____ | _____ | _____ | _____ | _____ |
| Weed 2 | Stage: | _____ | _____ | _____ | _____ | _____ | _____ |
| | Stage Scale: | _____ | _____ | _____ | _____ | _____ | _____ |
| | Density, Unit: | _____ | _____ | _____ | _____ | _____ | _____ |

| APPLICATION EQUIPMENT | | | | | | | |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|
| | | A | B | C | D | E | F |
| Appl. Equipment: | BACKPACK | _____ | _____ | _____ | _____ | _____ | _____ |
| Operating Pressure: | 43 | _____ | _____ | _____ | _____ | _____ | _____ |
| Nozzle Type: | AIXR | _____ | _____ | _____ | _____ | _____ | _____ |
| Nozzle Size: | 11002 | _____ | _____ | _____ | _____ | _____ | _____ |
| Nozzle Spacing, Unit: | 20 | IN | _____ | _____ | _____ | _____ | _____ |
| Nozzles/Row: | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Band Width, Unit: | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Boom Length, Unit: | 60 | IN | _____ | _____ | _____ | _____ | _____ |
| Boom Height, Unit: | 20 | IN | _____ | _____ | _____ | _____ | _____ |
| Ground Speed, Unit: | 3.5 | MPH | _____ | _____ | _____ | _____ | _____ |
| Incorporation Equip.: | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Hours to Incorp.: | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Incorp. Depth, Unit: | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Carrier: | WATER | _____ | _____ | _____ | _____ | _____ | _____ |
| Spray Volume, Unit: | 15 | GPA | _____ | _____ | _____ | _____ | _____ |
| Spray pH: | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Propellant: | CO2 | _____ | _____ | _____ | _____ | _____ | _____ |
| Tank Mix (Y/N): | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

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

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| PALMER AMARANTH CONTROL WITH TOUGH (NON-CROP) | | | | | | |
|--|-----------------------|-------------------------------|-----------|-----------|-----------|---------------|
| Trial ID: PE-19-18 | | Study Dir.: DENNIS LONG | | | | |
| Location: PONDER FARM | | Investigator: Eric P. Prostko | | | | |
| Weed Code | | | AMAPA | AMAPA | | |
| Crop Code | | | ----- | ----- | | |
| Rating Data Type | | | CONTROL | CONTROL | | |
| Rating Unit | | | PERCENT | PERCENT | | |
| Rating Date | | | May-11-18 | May-18-18 | | |
| Trt-Eval Interval | | | 7 DA-A | 14 DA-A | | |
| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Grow Unit | Appl Stg Code |
| 1 | 2 | | | | | |
| 1 | NO TOUGH NO 2,4-DB | | | | | |
| 2 | NO TOUGH 2,4-DB | 1.75 | SL | 18.0 oz/a | POST | A |
| 3 | TOUGH NO 2,4-DB | 5 | EC | 6.0 oz/a | POST | A |
| 4 | TOUGH 2,4-DB | 5 | EC | 6.0 oz/a | POST | A |
| | | 1.75 | SL | 18.0 oz/a | POST | A |
| 5 | TOUGH NO 2,4-DB | 5 | EC | 9.0 oz/a | POST | A |
| 6 | TOUGH 2,4-DB | 5 | EC | 9.0 oz/a | POST | A |
| | | 1.75 | SL | 18.0 oz/a | POST | A |
| 7 | TOUGH NO 2,4-DB | 5 | EC | 12.0 oz/a | POST | A |
| 8 | TOUGH 2,4-DB | 5 | EC | 12.0 oz/a | POST | A |
| | | 1.75 | SL | 18.0 oz/a | POST | A |
| 9 | TOUGH NO 2,4-DB | 5 | EC | 18.0 oz/a | POST | A |
| 10 | TOUGH 2,4-DB | 5 | EC | 18.0 oz/a | POST | A |
| | | 1.75 | SL | 18.0 oz/a | POST | A |
| 11 | TOUGH NO 2,4-DB | 5 | EC | 24.0 oz/a | POST | A |
| 12 | TOUGH 2,4-DB | 5 | EC | 24.0 oz/a | POST | A |
| | | 1.75 | SL | 18.0 oz/a | POST | A |
| Tukey's HSD P=.10 | | | 14.52 | 45.31 | | |
| Standard Deviation | | | 6.37 | 19.88 | | |
| CV | | | 43.26 | 63.54 | | |
| Grand Mean | | | 14.72 | 31.28 | | |
| Levene's F | | | 1.492 | 0.753 | | |
| Levene's Prob(F) | | | 0.182 | 0.682 | | |
| Replicate F | | | 4.795 | 2.249 | | |
| Replicate Prob(F) | | | 0.0076 | 0.1030 | | |
| Treatment F | | | 6.866 | 2.081 | | |
| Treatment Prob(F) | | | 0.0001 | 0.0549 | | |

Weed Code
AMAPA = AMARANTH, PALMER / AMARANTHUS PALMERI S.WATS.

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PALMER AMARANTH CONTROL WITH TOUGH
(NON-CROP)

Trial ID: PE-19-18 Study Dir.: DENNIS LONG
Location: PONDER FARM Investigator: Eric P. Prostko

| Weed Code | AMAPA | AMAPA | | | | | | | | |
|-------------------|-----------|-----------|------|------|------|------|------|--------|------|------|
| Crop Code | ----- | ----- | | | | | | | | |
| Rating Data Type | CONTROL | CONTROL | | | | | | | | |
| Rating Unit | PERCENT | PERCENT | | | | | | | | |
| Rating Date | May-11-18 | May-18-18 | | | | | | | | |
| Trt-Eval Interval | 7 DA-A | 14 DA-A | | | | | | | | |
| Trt | Treatment | Form | Form | Rate | Grow | Appl | | | | |
| No. | Name | Conc | Type | Rate | Unit | Stg | Code | Plot | | |
| | | | | | | | | 1 | 2 | |
| 1 | NO TOUGH | | | | | | | 101 | 0.0 | 0.0 |
| | NO 2,4-DB | | | | | | | 203 | 0.0 | 0.0 |
| | | | | | | | | 308 | 0.0 | 0.0 |
| | | | | | | | | 412 | 0.0 | 0.0 |
| | | | | | | | | Mean = | 0.0 | 0.0 |
| 2 | NO TOUGH | | | | | | | 102 | 0.0 | 40.0 |
| | 2,4-DB | 1.75 | SL | 18.0 | oz/a | POST | A | 207 | 10.0 | 50.0 |
| | | | | | | | | 312 | . | . |
| | | | | | | | | 401 | 10.0 | 10.0 |
| | | | | | | | | Mean = | 6.7 | 33.3 |
| 3 | TOUGH | 5 | EC | 6.0 | oz/a | POST | A | 103 | 0.0 | 30.0 |
| | NO 2,4-DB | | | | | | | 204 | 10.0 | 50.0 |
| | | | | | | | | 310 | . | . |
| | | | | | | | | 405 | 10.0 | 0.0 |
| | | | | | | | | Mean = | 6.7 | 26.7 |
| 4 | TOUGH | 5 | EC | 6.0 | oz/a | POST | A | 104 | 10.0 | 50.0 |
| | 2,4-DB | 1.75 | SL | 18.0 | oz/a | POST | A | 212 | 20.0 | 0.0 |
| | | | | | | | | 305 | 30.0 | 0.0 |
| | | | | | | | | 403 | 20.0 | 0.0 |
| | | | | | | | | Mean = | 20.0 | 12.5 |
| 5 | TOUGH | 5 | EC | 9.0 | oz/a | POST | A | 105 | 10.0 | 30.0 |
| | NO 2,4-DB | | | | | | | 202 | 10.0 | 60.0 |
| | | | | | | | | 309 | 20.0 | 60.0 |
| | | | | | | | | 402 | 10.0 | 0.0 |
| | | | | | | | | Mean = | 12.5 | 37.5 |
| 6 | TOUGH | 5 | EC | 9.0 | oz/a | POST | A | 106 | 10.0 | 50.0 |
| | 2,4-DB | 1.75 | SL | 18.0 | oz/a | POST | A | 211 | 10.0 | 30.0 |
| | | | | | | | | 307 | 20.0 | 40.0 |
| | | | | | | | | 404 | 20.0 | 0.0 |
| | | | | | | | | Mean = | 15.0 | 30.0 |
| 7 | TOUGH | 5 | EC | 12.0 | oz/a | POST | A | 107 | 10.0 | 30.0 |
| | NO 2,4-DB | | | | | | | 208 | 10.0 | 20.0 |
| | | | | | | | | 306 | 10.0 | 30.0 |
| | | | | | | | | 407 | 10.0 | 30.0 |
| | | | | | | | | Mean = | 10.0 | 27.5 |
| 8 | TOUGH | 5 | EC | 12.0 | oz/a | POST | A | 108 | 10.0 | 40.0 |
| | 2,4-DB | 1.75 | SL | 18.0 | oz/a | POST | A | 209 | 10.0 | 50.0 |
| | | | | | | | | 311 | . | . |
| | | | | | | | | 410 | 20.0 | 65.0 |
| | | | | | | | | Mean = | 13.3 | 51.7 |
| 9 | TOUGH | 5 | EC | 18.0 | oz/a | POST | A | 109 | 10.0 | 40.0 |
| | NO 2,4-DB | | | | | | | 206 | 20.0 | 60.0 |
| | | | | | | | | 303 | 20.0 | 0.0 |
| | | | | | | | | 409 | 20.0 | 40.0 |
| | | | | | | | | Mean = | 17.5 | 35.0 |
| 10 | TOUGH | 5 | EC | 18.0 | oz/a | POST | A | 110 | 10.0 | 50.0 |
| | 2,4-DB | 1.75 | SL | 18.0 | oz/a | POST | A | 205 | 10.0 | 60.0 |
| | | | | | | | | 301 | 30.0 | 20.0 |
| | | | | | | | | 408 | 30.0 | 60.0 |
| | | | | | | | | Mean = | 20.0 | 47.5 |
| 11 | TOUGH | 5 | EC | 24.0 | oz/a | POST | A | 111 | 30.0 | 30.0 |
| | NO 2,4-DB | | | | | | | 201 | 20.0 | 60.0 |
| | | | | | | | | 304 | 20.0 | 0.0 |
| | | | | | | | | 406 | 40.0 | 30.0 |
| | | | | | | | | Mean = | 27.5 | 30.0 |
| 12 | TOUGH | 5 | EC | 24.0 | oz/a | POST | A | 112 | 30.0 | 30.0 |
| | 2,4-DB | 1.75 | SL | 18.0 | oz/a | POST | A | 210 | 10.0 | 60.0 |
| | | | | | | | | 302 | 40.0 | 20.0 |
| | | | | | | | | 411 | 30.0 | 65.0 |
| | | | | | | | | Mean = | 27.5 | 43.8 |

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| PALMER AMARANTH CONTROL WITH TOUGH (NON-CROP) Trial ID: PE-19-18 Study Dir.: DENNIS LONG Location: PONDER FARM Investigator: Eric P. Prostko |
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| Weed Code AMAPA = AMARANTH, PALMER / AMARANTHUS PALMERI S.WATS. |
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