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**Cotton response to Staple and diuron applied preplant.
(08-904)**

Trial ID: C31-08

Study Dir.: Stanley Culpepper

Location: Ponder Farm

Investigator: Stanley Culpepper

Reps: 5

Plots: 6 by 25 feet

Spray vol: 14.8 gal/ac

Mix size: 1.5 liters (min .9646)

| Trt No. | Treatment Name | Form Conc | Form Unit | Form Type | Form Rate | Rate Unit | Grow Stg | Appl Code | Amt to Measure | Plot No. By Rep | | | | |
|---------|----------------|-----------|-----------|-----------|-----------|-----------|----------|-----------|----------------|-----------------|-----|-----|-----|-----|
| | | | | | | | | | | 1 | 2 | 3 | 4 | 5 |
| 1 | 21 DBP | | | | | | | A | | 101 | 213 | 307 | 411 | 516 |
| | Staple LX | 3.2 | | L | 2.1 | OZ/A | | A | 1.663 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | A | 3.75 ml/mx | | | | | |
| 2 | 21 DBP | | | | | | | A | | 102 | 217 | 304 | 417 | 513 |
| | Staple LX | 3.2 | | L | 3.1 | OZ/A | | A | 2.455 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | A | 3.75 ml/mx | | | | | |
| 3 | 21 DBP | | | | | | | A | | 103 | 214 | 308 | 407 | 509 |
| | Staple LX | 3.2 | | L | 2.1 | OZ/A | | A | 1.663 ml/mx | | | | | |
| | Direx | 4 | | L | 1.5 | PT/A | | A | 19.0 ml/mx | | | | | |
| 4 | 21 DBP | | | | | | | A | | 104 | 210 | 315 | 416 | 504 |
| | Staple LX | 3.2 | | L | 3.1 | OZ/A | | A | 2.455 ml/mx | | | | | |
| | Direx | 4 | | L | 2.2 | PT/A | | A | 27.87 ml/mx | | | | | |
| 5 | 14 DBP | | | | | | | B | | 105 | 207 | 312 | 402 | 510 |
| | Staple LX | 3.2 | | L | 2.1 | OZ/A | | B | 1.663 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | B | 3.75 ml/mx | | | | | |
| 6 | 14 DBP | | | | | | | B | | 106 | 211 | 309 | 404 | 515 |
| | Staple LX | 3.2 | | L | 3.1 | OZ/A | | B | 2.455 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | B | 3.75 ml/mx | | | | | |
| 7 | 14 DBP | | | | | | | B | | 107 | 209 | 311 | 415 | 501 |
| | Staple LX | 3.2 | | L | 2.1 | OZ/A | | B | 1.663 ml/mx | | | | | |
| | Direx | 4 | | L | 1.5 | PT/A | | B | 19.0 ml/mx | | | | | |
| 8 | 14 DBP | | | | | | | B | | 108 | 215 | 316 | 401 | 505 |
| | Staple LX | 3.2 | | L | 3.1 | OZ/A | | B | 2.455 ml/mx | | | | | |
| | Direx | 4 | | L | 2.2 | PT/A | | B | 27.87 ml/mx | | | | | |
| 9 | 7 DBP | | | | | | | C | | 109 | 212 | 302 | 408 | 514 |
| | Staple LX | 3.2 | | L | 2.1 | OZ/A | | C | 1.663 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | C | 3.75 ml/mx | | | | | |
| 10 | 7 DBP | | | | | | | C | | 110 | 216 | 317 | 414 | 507 |
| | Staple LX | 3.2 | | L | 3.1 | OZ/A | | C | 2.455 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | C | 3.75 ml/mx | | | | | |
| 11 | 7 DBP | | | | | | | C | | 111 | 208 | 303 | 406 | 508 |
| | Staple LX | 3.2 | | L | 2.1 | OZ/A | | C | 1.663 ml/mx | | | | | |
| | Direx | 4 | | L | 1.5 | PT/A | | C | 19.0 ml/mx | | | | | |
| 12 | 7 DBP | | | | | | | C | | 112 | 205 | 301 | 410 | 506 |
| | Staple LX | 3.2 | | L | 3.1 | OZ/A | | C | 2.455 ml/mx | | | | | |
| | Direx | 4 | | L | 2.2 | PT/A | | C | 27.87 ml/mx | | | | | |
| 13 | PRE | | | | | | | D | | 113 | 201 | 306 | 412 | 511 |
| | Staple LX | 3.2 | | L | 2.1 | OZ/A | | D | 1.663 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | D | 3.75 ml/mx | | | | | |
| 14 | PRE | | | | | | | D | | 114 | 202 | 314 | 409 | 503 |
| | Staple LX | 3.2 | | L | 3.1 | OZ/A | | D | 2.455 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | D | 3.75 ml/mx | | | | | |

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Reps: 5 Plots: 6 by 25 feet
 Spray vol: 14.8 gal/ac Mix size: 1.5 liters (min .9646)

| Trt No. | Treatment Name | Form Conc | Form Unit | Form Type | Form Rate | Rate Unit | Grow Stg | Appl Code | Amt Product to Measure | Plot No. By Rep | | | | |
|---------|----------------|-----------|-----------|-----------|-----------|-----------|----------|-----------|------------------------|-----------------|-----|-----|-----|-----|
| | | | | | | | | | | 1 | 2 | 3 | 4 | 5 |
| 15 | PRE | | | | | | | D | | 115 | 206 | 305 | 403 | 512 |
| | Staple LX | 3.2 | | L | 2.1 | OZ/A | | D | 1.663 ml/mx | | | | | |
| | Direx | 4 | | L | 1.5 | PT/A | | D | 19.0 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | D | 3.75 ml/mx | | | | | |
| 16 | PRE | | | | | | | D | | 116 | 203 | 313 | 405 | 517 |
| | Staple LX | 3.2 | | L | 3.1 | OZ/A | | D | 2.455 ml/mx | | | | | |
| | Direx | 4 | | L | 2.2 | PT/A | | D | 27.87 ml/mx | | | | | |
| | NIS | | | L | 0.25 | % V/V | | D | 3.75 ml/mx | | | | | |
| 17 | non-treated | | | | | | | | | 117 | 204 | 310 | 413 | 502 |

Sort Order: Treatment

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

| Amount* | Unit | Treatment Name | Form Conc | Form Type | Lot Code |
|---------|------|----------------|-----------|-----------|----------|
| 41.174 | ml | Staple LX | 3.2 | L | |
| 74.992 | ml | NIS | | L | |
| 234.350 | ml | Direx | 4 | L | |

- * 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1.5 liters (mix size basis).
- * Product amount calculations increased 25 % for overage adjustment.
- * 'Per volume' calculations use spray volume= 14.8 gal/ac, mix size= 1.5 liters.

Trial Comments

OBJECTIVE: Determine cotton response to Staple and Direx applied preplant.

Visual Cotton Response:

1. Main effects were significant.
2. Pooled over application timing, Staple rate or the addition of diuron with Staple did not impact injury.
3. Pooled over Staple rate and mixtures with Direx, greatest injury was noted with applications 7 DBP when compared to all other application timings. No differences were noted with PRE applications and 14 or 21 d preplant applications.
4. Injury was less than 12% by all treatments throughout the season.

Weed Response:

1. Palmer amaranth and smallflower morningglory were present in the study.
2. Excellent Palmer amaranth control was noted through 6 d after of planting.
3. Smallflower morningglory control by preplant applications provided excellent control. PRE applications were made to emerged plants and at 6 DAT, Direx in the mixture improved control.
4. The trial was maintained weed free from 6 DAP till harvest.

Seed Cotton Yield:

1. Herbicide treatments did not impact yield.

GENERAL COMMENTS:

1. Irrigation was implemented 3 and 6 d after planting to enhance injury potential.
2. May 27, June 20, and July 10 - Oversprayed with 22 oz. of WMax.
3. Trials was maintained weed free.

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**Cotton response to Staple and diuron applied preplant.
(08-904)**

Trial ID: C31-08

Study Dir.: Stanley Culpepper

Location: Ponder Farm

Investigator: Stanley Culpepper

| Weed Code | | GOSHI | GOSHI | GOSHI | GOSHI | AMAPA | IAQTA | Seed Yld | Seed Yld | |
|--------------------|-------------------------------------|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Crop Code | | injury | injury | injury | injury | GOSHI | GOSHI | GOSHI | GOSHI | |
| Rating Data Type | | % | % | % | % | control | control | yield | yield | |
| Rating Unit | | | | | | % | % | lb/2row | lb/acre | |
| Rating Date | | May-27-08 | Jun-01-08 | Jun-12-08 | Jun-27-08 | May-27-08 | May-27-08 | Sep-15-08 | Sep-15-08 | |
| Trt-Eval Interval | | 6 DAP | 11 DAP | 22 DAP | 37 DAP | 6 DAP | 6 DAP | 137 DA-A | 137 DA-A | |
| ARM Action Codes | | | | | | | | | TY1 | |
| # Subsamples, Dec. | | | | | | | | | 1 | |
| Trt No. | Treatment Name | Rate | Rate | Rate | Rate | Rate | Rate | Rate | Rate | |
| | | Unit | Unit | Unit | Unit | Unit | Unit | Unit | Unit | |
| | | | | | | | | | | |
| 1 | 21 DBP Staple LX NIS | 2.1 OZ/A 0.25 % V/V | 6 ab | 5 cd | 5 b-e | 0 a | 99 a | 96 a | 9 ab | 2538.1 ab |
| 2 | 21 DBP Staple LX NIS | 3.1 OZ/A 0.25 % V/V | 4 b | 4 de | 3 b-e | 0 a | 99 a | 97 a | 8 ab | 2445.2 ab |
| 3 | 21 DBP Staple LX Direx NIS | 2.1 OZ/A 1.5 PT/A 0.25 % V/V | 6 ab | 4 de | 5 b-e | 0 a | 99 a | 99 a | 9 ab | 2607.8 ab |
| 4 | 21 DBP Staple LX Direx NIS | 3.1 OZ/A 2.2 PT/A 0.25 % V/V | 5 b | 4 de | 2 b-e | 0 a | 99 a | 99 a | 9 ab | 2724.0 ab |
| 5 | 14 DBP Staple LX NIS | 2.1 OZ/A 0.25 % V/V | 7 ab | 3 de | 2 cde | 0 a | 99 a | 97 a | 8 ab | 2317.4 ab |
| 6 | 14 DBP Staple LX NIS | 3.1 OZ/A 0.25 % V/V | 9 a | 6 bcd | 8 a-d | 0 a | 99 a | 99 a | 9 ab | 2610.7 ab |
| 7 | 14 DBP Staple LX Direx NIS | 2.1 OZ/A 1.5 PT/A 0.25 % V/V | 7 ab | 4 de | 2 b-e | 0 a | 99 a | 99 a | 9 ab | 2567.1 ab |
| 8 | 14 DBP Staple LX Direx NIS | 3.1 OZ/A 2.2 PT/A 0.25 % V/V | 7 ab | 9 abc | 9 abc | 0 a | 99 a | 99 a | 10 a | 2798.9 a |
| 9 | 7 DBP Staple LX NIS | 2.1 OZ/A 0.25 % V/V | 6 ab | 10 ab | 6 b-e | 0 a | 99 a | 97 a | 9 ab | 2607.8 ab |
| 10 | 7 DBP Staple LX NIS | 3.1 OZ/A 0.25 % V/V | 7 ab | 11 a | 14 a | 0 a | 99 a | 98 a | 9 ab | 2744.3 ab |
| 11 | 7 DBP Staple LX Direx NIS | 2.1 OZ/A 1.5 PT/A 0.25 % V/V | 6 ab | 6 bcd | 5 b-e | 0 a | 99 a | 99 a | 8 b | 2236.1 b |
| 12 | 7 DBP Staple LX Direx NIS | 3.1 OZ/A 2.2 PT/A 0.25 % V/V | 5 b | 9 abc | 9 ab | 0 a | 99 a | 99 a | 8 ab | 2343.5 ab |
| 13 | PRE Staple LX NIS | 2.1 OZ/A 0.25 % V/V | 5 b | 3 de | 6 b-e | 0 a | 99 a | 92 b | 9 ab | 2520.7 ab |

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| Weed Code | GOSHI | GOSHI | GOSHI | GOSHI | AMAPA | IAQTA | Seed Yld | Seed Yld |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Crop Code | GOSHI | GOSHI | GOSHI | GOSHI | GOSHI | GOSHI | GOSHI | GOSHI |
| Rating Data Type | injury | injury | injury | injury | control | control | yield | yield |
| Rating Unit | % | % | % | % | % | % | lb/2row | lb/acre |
| Rating Date | May-27-08 | Jun-01-08 | Jun-12-08 | Jun-27-08 | May-27-08 | May-27-08 | Sep-15-08 | Sep-15-08 |
| Trt-Eval Interval | 6 DAP | 11 DAP | 22 DAP | 37 DAP | 6 DAP | 6 DAP | 137 DA-A | 137 DA-A |
| ARM Action Codes | | | | | | | | TY1 |
| # Subsamples, Dec. | | | | | | | | 1 |
| Trt Treatment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No. Name Rate Unit | | | | | | | | |
| 14 PRE | 5 b | 5 cd | 5 b-e | 0 a | 98 b | 93 b | 9 ab | 2587.5 ab |
| Staple LX 3.1 OZ/A | | | | | | | | |
| NIS 0.25 % V/V | | | | | | | | |
| 15 PRE | 4 b | 5 cd | 2 de | 0 a | 99 a | 99 a | 8 ab | 2358.0 ab |
| Staple LX 2.1 OZ/A | | | | | | | | |
| Direx 1.5 PT/A | | | | | | | | |
| NIS 0.25 % V/V | | | | | | | | |
| 16 PRE | 5 b | 4 de | 5 b-e | 0 a | 99 a | 99 a | 9 ab | 2528.8 ab |
| Staple LX 3.1 OZ/A | | | | | | | | |
| Direx 2.2 PT/A | | | | | | | | |
| NIS 0.25 % V/V | | | | | | | | |
| 17 non-treated | 0 c | 1 e | 0 e | 0 a | 0 c | 0 c | 9 ab | 2683.3 ab |
| LSD (P=.05) | 3.0 | 3.7 | 5.9 | 0.0 | 0.5 | 3.4 | 1.6 | 452.35 |
| Standard Deviation | 2.4 | 2.9 | 4.7 | 0.0 | 0.4 | 2.7 | 1.2 | 357.62 |
| CV | 42.37 | 53.24 | 88.54 | 0.0 | 0.47 | 2.94 | 14.07 | 14.07 |
| Bartlett's X2 | 14.959 | 7.957 | 15.481 | 0.0 | 0.0 | 12.853 | 35.172 | 35.17 |
| P(Bartlett's X2) | 0.381 | 0.95 | 0.417 | . | . | 0.045* | 0.004* | 0.004* |

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

Column 8: TY1 = 290.4*[C7]

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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: 94 | % OM: 1.3 | Texture: sand | |
| % Silt: 2 | pH: 5.8 | Soil Name: _____ | |
| % Clay: 4 | CEC: _____ | Fert. Level: _____ | |

ADDITIONAL MEASURED ELEMENTS

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

MOISTURE CONDITIONS

| No. | Date | Time | Amount | Unit | Type | Interval | Unit |
|-----|------|------|--------|------|------|----------|------|
| 1. | | | | | | | |

Overall Moisture Conditions: irrigated

Closest Weather Station: _____ Distance: _____ Unit: ____

APPLICATION DESCRIPTION

| | A | B | C | D |
|----------------------|-----------|-----------|-----------|-----------|
| Application Date: | May-01-08 | May-07-08 | May-16-08 | May-21-08 |
| Time of Day: | 4:00 pm | 7:00 pm | 8:00 am | 8:00 am |
| Application Method: | broadcast | broadcast | broadcast | broadcast |
| Application Timing: | 21 DBP | 14 DBP | 7 DBP | PRE |
| Applic. Placement: | on soil | on soil | on soil | on soil |
| Air Temp., Unit: | 83 F | 87 F | 68 F | 77 F |
| % Relative Humidity: | 43 | 47 | 66 | 69 |
| Wind Velocity, Unit: | 4 mph | 3 mph | 0 mph | 2 mph |
| Dew Presence (Y/N): | N | N | Y | N |
| Water Hardness: | | | | |
| Soil Temp., Unit: | 89 F | 91 F | 66 F | 70 F |
| Soil Moisture: | fair | fair | fair | moist |
| % Cloud Cover: | 0 | 0 | 0 | 100 |

CROP STAGE AT EACH APPLICATION

| | A | B | C | D |
|---------------------|----------|----------|----------|---------|
| Crop 1 Code, Stage: | GOSHI A | GOSHI B | GOSHI C | GOSHI D |
| Stage Scale: | preplant | preplant | preplant | PRE |
| Height, Unit: | 0 inch | 0 inch | 0 inch | 0 inch |

WEED STAGE AT EACH APPLICATION

| | A | B | C | D |
|---------------------|----------|----------|---------|---------|
| Weed 1 Code, Stage: | IAQTA A | IAQTA B | IAQTA C | IAQTA D |
| Stage Scale: | preplant | preplant | 1 in | 2 in |
| Density, Unit: | 0 ydsq | 0 ydsq | 2 ydsq | 2 ydsq |
| Weed 2 Code, Stage: | AMAPA A | AMAPA B | AMAPA C | AMAPA D |
| Stage Scale: | preplant | preplant | 2 in | 2 inch |
| Density, Unit: | 0 ydsq | 0 ydsq | 1 ydsq | 2 ydsq |

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APPLICATION EQUIPMENT

| | A | B | C | D |
|------------------------------|----------|----------|----------|----------|
| Appl. Equipment: | backpack | backpack | backpack | backpack |
| Operating Pressure: | 24 | 24 | 24 | 24 |
| Nozzle Type: | flat fan | flat fan | flat fan | flat fan |
| Nozzle Size: | 11002 | 11002 | 11002 | 11002 |
| Nozzle Spacing, Unit: | 18 in | 18 in | 18 in | 18 in |
| Nozzles/Row: | 2 | 2 | 2 | 2 |
| Band Width, Unit: | | | | |
| Boom Length, Unit: | 4.5 ft | 4.5 ft | 4.5 ft | 4.5 ft |
| Boom Height, Unit: | 15 in | 15 in | 15 in | 15 in |
| 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: | 15 GPA | 15 GPA | 15 GPA | 15 GPA |
| Spray pH: | | | | |
| Propellant: | CO2 | CO2 | CO2 | CO2 |
| Tank Mix (Y/N): | y | y | y | y |

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