

Aphid Management in Winter Wheat - Bayer.

Project Code: 07-ARC-17-100-M25 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 residual control of aphids with Raxil XT or Gaucho XT seed treatment and the benefit of combining with foliar applications of Baythroid.

Crop 1: TRZAW wheat, winter Variety: P25R47  
 Planting Method: Seeded Planting Date: 10-25-06  
 Rate: 1.3 mil. S/A Depth: 1.0 IN  
 Row Spacing: 7.5 IN Seed Bed: Wet  
 Soil Moisture: ABONOR

Plot Width, Unit: 5 FT Plot Length, Unit: 24 FT Reps: 4  
 Tillage Type: Reduced-Till Study Design: Randomized complete block  
 Previous Crop, Year: GLXMA, 2006  
 Field Prep./Maintenance: 18-46-0 applied preplant on 10-1-07. 95 lb N in early spring on 3-7-07.

Soil Name: Stoy % OM: 1.5 pH: 6.3 CEC: 7.4  
 Texture: Silt loam Fert. Level: P1: 70 LB/A, K: 241 LB/A

**APPLICATION DESCRIPTION**

|                      | A        | B       |
|----------------------|----------|---------|
| Application Date:    | 10-25-06 | 3-27-07 |
| Time of Day:         | 8:00     | 11:30   |
| Application Method:  | SEED     | Spray   |
| Application Timing:  | SEED TRT | THRSHLD |
| Applic. Placement:   |          | BROFOL  |
| Air Temp., Unit:     |          | 83 F    |
| % Relative Humidity: |          | 40      |
| Wind Velocity, Unit: |          | 3-5 MPH |
| Dew Presence (Y/N):  |          | N       |
| Soil Moisture:       |          | NORMAL  |
| % Cloud Cover:       |          | 20      |

**CROP STAGE AT EACH APPLICATION**

|                     | A     |    | B     |     |
|---------------------|-------|----|-------|-----|
| Crop 1 Code, Stage: | TRZAW | NA | TRZAW | 3-4 |
| Height, Unit:       | NA    | NA | 10    | IN  |

**APPLICATION EQUIPMENT**

|                     | A        | B           |
|---------------------|----------|-------------|
| Appl. Equipment:    | SEED TRT | CO2 sprayer |
| Operating Pressure: | NA       | 35 PSI      |
| Nozzle Type:        | NA       | Flat fan    |
| Nozzle Size:        | NA       | XR 8003     |
| Boom Length, Unit:  |          | 5 FT        |
| Spray Volume, Unit: |          | 20 GPA      |

**NOTES:**

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| Weed Code         | TRZAW    | TRZAW    | TRZAW   | TRZAW    | TRZAW    | TRZAW    | TRZAW    |
|-------------------|----------|----------|---------|----------|----------|----------|----------|
| Crop Code         | Moisture | Test wt. | Yield   | Plants   | Aphids   | Aphids   | Aphids   |
| Rating Data Type  | Percent  | lb/bu    | bu/A    | mil./A   | 1 ft row | 1 ft row | 1 ft row |
| Rating Unit       | 6-14-07  | 6-14-07  | 6-14-07 | 11-17-06 | 11-27-06 | 12-5-06  | 3-26-07  |
| Rating Date       |          |          |         | 23 DAP   | 33 DAP   | 41 DAP   | -1 DA-B  |
| Trt-Eval Interval |          |          |         |          |          |          | 20 DA-B  |

| Trt No.           | Treatment Name | Form Conc | Form Type | Rate  | Rate Unit | Prod Rate | Prod Unit | Grow Stg | Appl Code | 15.5 b  | 51.8 a  | 65 bc  | 1.35 b | 3.1 a  | 0.0 a  | 68 a   | 10 a   |
|-------------------|----------------|-----------|-----------|-------|-----------|-----------|-----------|----------|-----------|---------|---------|--------|--------|--------|--------|--------|--------|
| 1                 | P25R47         |           |           |       |           |           |           |          |           |         |         |        |        |        |        |        |        |
| 1                 | NONTREATED     |           |           |       |           |           |           |          |           |         |         |        |        |        |        |        |        |
| 2                 | P25R47         |           |           |       |           |           |           |          |           | 16.1 a  | 51.3 b  | 64 c   | 1.76 a | 4.8 a  | 0.0 a  | 62 a   | 13 a   |
| 2                 | RAXIL XT       |           |           |       |           | 0.16      | oz/cwt    | SEED     | A         |         |         |        |        |        |        |        |        |
| 3                 | P25R47         |           |           |       |           |           |           |          |           | 15.9 ab | 51.7 ab | 71 ab  | 2.04 a | 0.2 b  | 0.0 a  | 21 b   | 3 b    |
| 3                 | GAUCHO XT      |           |           |       |           | 3.4       | oz/cwt    | SEED     | A         |         |         |        |        |        |        |        |        |
| 4                 | P25R47         |           |           |       |           |           |           |          |           | 15.9 ab | 51.9 a  | 77 a   | 1.84 a | 0.1 b  | 0.0 a  | 33 b   | 0 b    |
| 4                 | GAUCHO XT      |           |           |       |           | 3.4       | oz/cwt    | SEED     | A         |         |         |        |        |        |        |        |        |
| 4                 | BAYTHRIOD XL   | 1 EC      |           | 0.014 | lb ai/a   | 1.8       | fl oz/a   | THRSHLD  | B         |         |         |        |        |        |        |        |        |
| LSD (P=.05)       |                |           |           |       |           |           |           |          |           | 0.52    | 0.52    | 6.8    | 0.387  | 1.84   | 0.00   | 22.6   | 5.0    |
| Replicate F       |                |           |           |       |           |           |           |          |           | 8.299   | 6.314   | 0.677  | 0.288  | 2.079  | 0.000  | 1.118  | 0.443  |
| Replicate Prob(F) |                |           |           |       |           |           |           |          |           | 0.0059  | 0.0136  | 0.5876 | 0.8327 | 0.1734 | 1.0000 | 0.3920 | 0.7280 |
| Treatment F       |                |           |           |       |           |           |           |          |           | 2.858   | 3.393   | 8.736  | 5.780  | 15.907 | 0.000  | 10.214 | 15.052 |
| Treatment Prob(F) |                |           |           |       |           |           |           |          |           | 0.0968  | 0.0674  | 0.0050 | 0.0175 | 0.0006 | 1.0000 | 0.0030 | 0.0007 |

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

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|                   |         |         |
|-------------------|---------|---------|
| Weed Code         |         |         |
| Crop Code         | TRZAW   | TRZAW   |
| Rating Data Type  | BYD     | BYD     |
| Rating Unit       | Percent | Percent |
| Rating Date       | 5-14-07 | 5-30-07 |
| Trt-Eval Interval | 48 DA-B | 64 DA-B |

| Trt No.           | Treatment Name | Form Conc | Form Type | Rate  | Rate Unit | Prod Rate | Prod Unit | Grow Stg | Appl Code |        |        |
|-------------------|----------------|-----------|-----------|-------|-----------|-----------|-----------|----------|-----------|--------|--------|
| 1                 | P25R47         |           |           |       |           |           |           |          |           | 9 a    | 50 a   |
| 1                 | NONTREATED     |           |           |       |           |           |           |          |           |        |        |
| 2                 | P25R47         |           |           |       |           |           |           |          |           | 7 a    | 50 a   |
| 2                 | RAXIL XT       |           |           |       |           | 0.16      | oz/cwt    | SEED     | A         |        |        |
| 3                 | P25R47         |           |           |       |           |           |           |          |           | 2 b    | 23 b   |
| 3                 | GAUCHO XT      |           |           |       |           | 3.4       | oz/cwt    | SEED     | A         |        |        |
| 4                 | P25R47         |           |           |       |           |           |           |          |           | 2 b    | 14 b   |
| 4                 | GAUCHO XT      |           |           |       |           | 3.4       | oz/cwt    | SEED     | A         |        |        |
| 4                 | BAYTHRIOD XL   | 1 EC      |           | 0.014 | lb ai/a   | 1.8       | fl oz/a   | THRSHLD  | B         |        |        |
| LSD (P=.05)       |                |           |           |       |           |           |           |          |           | 2.7    | 22.7   |
| Replicate F       |                |           |           |       |           |           |           |          |           | 0.706  | 0.545  |
| Replicate Prob(F) |                |           |           |       |           |           |           |          |           | 0.5722 | 0.6636 |
| Treatment F       |                |           |           |       |           |           |           |          |           | 15.235 | 6.974  |
| Treatment Prob(F) |                |           |           |       |           |           |           |          |           | 0.0007 | 0.0101 |

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

Trial Comments

1. Protocol: Bayer.
2. Ratings: Report the number of aphids and infested plants per foot of row at threshold timing and 21 DA Baythroid treatment. % BYDV, Yield (bu/A).  
Wheat stand counts at 7 DAE.
3. Maintain weed-free with a burndown herbicide if applicable and Harmony Extra if needed.
4. All border plots planted to FS 645 treated with Dividend Extreme ST.
5. Scout for aphids every week in fall and spring until threshold is met.  
Aphid counts are as follows:  
At 7 DAP there was no emerged wheat, emerged wheat in the adjacent study was scouted and no aphids were found.  
At 14 DAP there was very little emerged wheat, emerged wheat in the adjacent study was scouted and 2 aphids were found in 24 plots.  
At 21 DAP emerged wheat was 1-2 leaf and no aphids were found, emerged wheat in the adjacent study was also scouted and no aphids were found.  
At 33 DAP aphids were found and counted.  
At 41 DAP cold weather reduced aphid populations in all plots.  
At 20 DA-B cold weather reduced aphid populations in all plots.
6. Spray Baythroid XL at 2.4 fl oz/A if wheat damage from aphids has already occurred.
7. 1 ft row = One foot of row. DAP= Days after planting. DA-B = Days after THRSHLD application.