

# INSECTS AND WEEDS IN FOCUS

Web site: <http://entowww.tamu.edu>

<http://agfacts.tamu.edu/~rparker/>

VOL. XXXIII NO. 1

ENTO/SCS

January, 8, 2008

- ✓ **GULF COAST GRAIN HANDLERS CONFERENCE**
- ✓ **2007 RESULTS OF INSECT & CROP RESEARCH AVAILABLE**
- ✓ **A TRIBUTE TO THE SOUTH TEXAS COTTON & GRAIN ASSOCIATION**
- ✓ **INSECTICIDE PROTECTANT STUDY ON STORED CORN**
- ✓ **COTTON VARIETY TEST RESULTS**
- ✓ **AFLATOXIN & DATE OF CORN PLANTING**
- ✓ **TREATMENT TIMING FOR OPTIMUM IMPACT ON COTTON FLEAHOPPER**
- ✓ **INTERESTING INSECTS**

## GULF COAST GRAIN HANDLERS CONFERENCE

The annual grain handlers conference will be January 24 with registration starting at 8:00 a.m. The conference will be held at the **El Campo Civic Center located just off of Hwy 71 north of downtown El Campo.**

Please preregister by January 21, in order that we may more accurately estimate a number for the noon meal. You may pre-register by calling 979/732-2082. The preregistration cost is \$15.00 which covers the meal. Registration at the door will be \$20.00. RDP

## 2007 RESULTS OF INSECT & CROP RESEARCH AVAILABLE

The annual publication titled "Results of Insect Control Evaluations on Corn, Sorghum, and Cotton in the Texas Coastal Bend Counties & Crop Hybrid/Variety Comparisons" can be obtained by calling our office for a fee copy. It is also available on the internet at <http://agfacts.tamu.edu/~rparker>.

With the exception of sugarcane borer, insect numbers in the corn experiments were very low in number, and little was obtained from insect evaluations in sorghum for the same reason. Results from some of the cotton experiments were very interesting, especially the cotton fleahopper studies. One study dealt with aspects of 2,4-D use to kill cotton stalks. Other interesting results were obtained from date of planting studies on corn, sorghum, and cotton; evaluation of cotton varieties; and evaluation of hybrid/variety studies on corn, sorghum, canola, and sunflowers. The final 4 months of a long-term study of insect management in stored corn should be of interest to people who have

responsibility for storing grain. Results are also provided that monitored corn stored in 8-thousand bushel polyethylene bags. RDP

## A TRIBUTE TO THE SOUTH TEXAS COTTON & GRAIN ASSOCIATION

The South Texas Cotton and Grain Association, headquartered in Victoria, Texas, has been an unwavering supporter of our Extension programs. The Association serves as an advocate for region agricultural producers from the local to the national level. It also has working relationships with other commodity associations, Texas Pest Management Association, National Cotton Council, Cotton Incorporated, grain handler groups, Texas Food and Fiber Council, and many others.

Direct help to Extension has included funds for county crop tours, special cotton and grain field days, IPM research projects, county demonstrations and applied research, Extension Agent IPM position support, and major educational events for the Gulf Coast region. The major regional educational programs for which they provided assistance and worked with us as a full partner include Coastal Bend Area Cotton Symposium (1979); Instrument Cotton Classing Conference (1982); South Texas Cotton Improvement Conference (1988); Chemicals, Agriculture and Our Environment Conference (1990); Texas Grain Improvement Conference (1991); Grain Sorghum for the 21<sup>st</sup> Century: Working Together as an Industry (1997); and Texas Gulf Coast Cotton Conference: Improving Yield, Quality, Marketing (2001).

The Association has been instrumental in gaining support for funding of many of our demonstration and research projects as they see it useful for area commercial agriculture. The support of South Texas Cotton and Grain Association is acknowledged and greatly appreciated. RDP

## INSECTICIDE PROTECTANT STUDY ON STORED CORN

The study demonstrated that several products used at reduced rates not to exceed \$0.04/bushel cost would protect stored corn for at least 12 months. However, the dust formulation of spinosad and Diacon II used alone were not effective. In the case of the Diacon II (insect growth regulator) it was not effective on weevils that attack stored grain since the product is only

effective on immature insects of which the weevil larvae are never exposed since the adult female lays eggs inside corn kernels. The product is, however, very effective on the other stored grain insects and is needed with Actellic for control of the lesser grain borer. It should be noted that all that remains for spinosad to be sold for use on stored grain is approval by Japan. Once that approval is obtained the company will market spinosad for use on stored grain. Much more data is available in the research report mentioned above. Table 1 provides a quick overview of test results.

Table 1. **Month 12 results** of stored corn insect protectants.

Treatment/ 1000 bu	Grain temp (°F)	Insects/ quart	% loss in value
Spinosad 0.5% AI (11.2 lb)	65.0 <sup>ab</sup>	63.0 <sup>a</sup>	27.4 <sup>a</sup>
Actellic 5E (6.83 oz)	59.8 <sup>c</sup>	1.0 <sup>b</sup>	2.6 <sup>c</sup>
Actellic + Diacon II (3.86 oz + 3.5 oz)	59.5 <sup>c</sup>	0.0 <sup>b</sup>	1.5 <sup>c</sup>
Spinosad 0.75 lb (9.6 oz)	59.3 <sup>c</sup>	1.5 <sup>b</sup>	1.7 <sup>c</sup>
Spinosad + Diacon II (5.43 oz + 3.5 oz)	59.5 <sup>c</sup>	0.0 <sup>b</sup>	0.7 <sup>c</sup>
Diacon II (8.07 oz)	67.0 <sup>a</sup>	52.5 <sup>a</sup>	17.6 <sup>ab</sup>
Nontreated	63.8 <sup>b</sup>	51.5 <sup>a</sup>	15.8 <sup>b</sup>
LSD (P=0.05)	3.21	32.45	11.39
P>F	.0001	.0004	.0003

Means in a column followed by the same letter are not significantly different by ANOVA. RDP

## COTTON VARIETY TEST RESULTS

Attached to this newsletter are results of a comparison of 47 cotton varieties in Nueces County at the Texas AgriLife Research & Extension Center at Corpus Christi in 2007. Several of the varieties that were in the top 10 at this location seemed to consistently be among the better performing varieties in other Coastal Bend variety comparisons. RDP

## AFLATOXIN & DATE OF CORN PLANTING

Late February and early March were judged to be the best planting dates for corn at Corpus Christi in 2007. Table 2 provides a quick reference to the results; additional information is available in the 2007 research book.

Table 2. Effect of planting dates on corn production factors, Texas Agricultural Experiment Station, Nueces County, TX, 2007.

Planting date	Bushel weight (lb)	Aflatoxin PPB	Yield bu/acre
Feb 19	58.8 <sup>a</sup>	6.0 <sup>b</sup>	103.5 <sup>a</sup>
Feb 26	58.6 <sup>ab</sup>	85.8 <sup>b</sup>	108.8 <sup>a</sup>
Mar 5	57.8 <sup>b</sup>	63.0 <sup>b</sup>	113.0 <sup>a</sup>
Mar 19	56.5 <sup>c</sup>	16.3 <sup>b</sup>	118.0 <sup>a</sup>
Mar 26	55.9 <sup>cd</sup>	130.8 <sup>b</sup>	99.7 <sup>a</sup>
Apr 2	55.4 <sup>d</sup>	912.5 <sup>b</sup>	107.7 <sup>a</sup>
Apr 10	53.6 <sup>e</sup>	2000.0 <sup>a</sup>	111.1 <sup>a</sup>
Apr 17	52.3 <sup>f</sup>	2350.0 <sup>a</sup>	95.9 <sup>a</sup>
LSD (P=0.05)	0.93	975.43	NS
P > F	.0001	.0001	.0938

Means in a column followed by the same letter are not significantly different by ANOVA. RDP

## TREATMENT TIMING FOR OPTIMUM IMPACT ON COTTON FLEAHOPPER

Only data dealing with yield and dollar return is given herein; more detailed information is provided in the research book and in a paper prepared for presentation at the Beltwide Cotton Conferences.

Fleahopper numbers were above the established treatment threshold beginning in the first week of squaring, but the cotton vegetative internodes were short due to cold weather suggesting that fleahopper treatment would not be economical and treatment should be delayed a week. Therefore, a field experiment was conducted to evaluate the consequences of the suggested delayed treatment. Treatments were initiated beginning late in the 1<sup>st</sup> week of squaring followed by initiation of additional plot treatments on about a weekly basis thereafter. One set of plots was treated only during the 2<sup>nd</sup> and 4<sup>th</sup> weeks. All insecticide treated cotton was treated during the 4<sup>th</sup> week. Fleahoppers were reduced to very low numbers following initiation of treatments for the insect. The lowest yield and dollar return among the insecticide treatments was the cotton treated 4 times beginning late in the 1<sup>st</sup> week of squaring (Fig. 1). This treatment produced a \$43.16 per acre dollar return; whereas, the 3 remaining insecticide treatments averaged \$86.90 per acre return over the nontreated cotton.

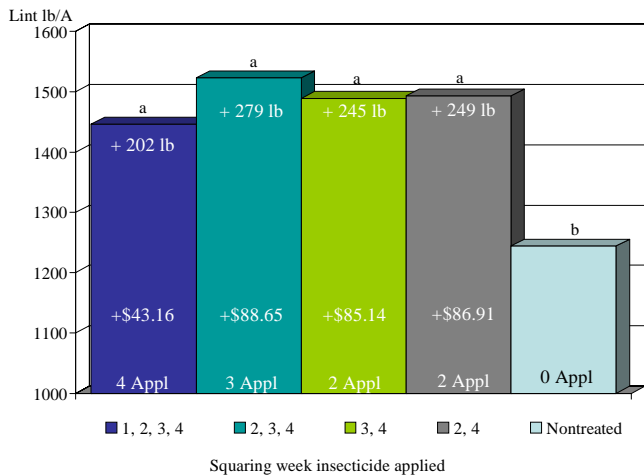


Fig. 1. Effect of fleahopper insecticide treatment timing on cotton yield and dollar return. Cotton value based on \$0.55/lb and \$0.065/lb for seed using a factor of 1.56 times lint weight. Costs include Centric 40WG (\$4.50/oz), application (\$2.50/acre) and harvesting/hauling/ginning cost for extra lint above nontreated cotton (\$0.21/lb lint). LSD (P = 0.05).RDP

## INTERESTING INSECTS

Earwigs have been discussed in this section of the newsletter several times over the years, but recently May Berenbaum, Department of Entomology, University of Illinois, had an article in the *American Entomologist* with a few more facts about these interesting insects. I have used parts of her article herein.

The earwigs are assigned their own taxonomic group, the order Dermaptera (skin wings). There are only about 1800 species of these insects worldwide. Most also have a long, flexible abdomen capped with a pair of pincers, called forceps, used variously for opening up their wings, grabbing mates during courtship, defending themselves, and immobilizing prey. There are a few exceptional species that are ectoparasites - that is, they live externally on the bodies of warm-blooded hosts and suck their blood. About ten species live in the fur of giant rats in tropical Africa, eating what is euphemistically referred to as "scurf" (shredded skin flakes or scales). Another half-dozen or so species live on the bodies of bats in Malaysia; these oddballs are wingless, and have forceps that are straight, rather than curved.

Nations that have agreed politically on no other issues seem to share the unshakeable conviction that earwigs are irresistibly drawn to ears. Like so much entomological misinformation, the notion that earwigs infest ears may have originated with Pliny the Elder. Although entomologists generally like to rationalize this persistent notion that earwigs like to crawl into ears by explaining that many earwigs, particularly the most commonly encountered ones, seek out moist dark places, which aptly describes most auditory canals. May Berenbaum said "I find it curious that I've only been able to find one single reference, in about ten centuries of literature, to an earwig actually being found in an ear, which hardly seems common enough to merit a common name."

It's really a shame that about the only thing people think they know about earwigs isn't true. Laying eggs in a place where their kids couldn't survive just doesn't fit the earwig profile; all known free-living earwigs display a remarkable degree of maternal care, keeping watch over their eggs and newly hatched nymphs, feeding them and protecting them from erstwhile predators.

RDP

For more information contact:

Roy D. Parker  
 Extension Entomologist  
 10345 Hwy 44, Corpus Christi, TX 78406  
 (361) 265-9203, Fax (361) 265-9434



View our newsletter earlier on the internet at <http://agfacts.tamu.edu/~rparker>. Also pest management information is available at [www.txaac.org](http://www.txaac.org).

Educational programs conducted by Texas AgriLife Extension serve people of all ages regardless of socioeconomic level, race, color, sex, religion, handicap or national origin. The information given herein is for educational purposes only. References to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas AgriLife Extension is implied.

The Texas A&M University System, U.S. Department of Agriculture, and the Commissioners Courts of Texas Cooperating

Cotton lint characteristics, yield, loan value, and acre value of varieties, Texas Cooperative Extension, Texas A&M Research and Extension Center, Nueces County, Texas, 2007.

Variety	Mic	Leng	Unif	Streng	Elong	Yield lb lint/A	Net loan (¢/lb)	Net return (\$/acre)
DP 455 BR	4.4 <sup>d-j</sup>	1.15 <sup>n-s</sup>	82.1 <sup>i-o</sup>	28.1 <sup>f-n</sup>	6.5 <sup>r-w</sup>	1564 <sup>a</sup>	53.75	681
PHY 375 WRF	4.4 <sup>g-n</sup>	1.14 <sup>o-s</sup>	82.9 <sup>b-n</sup>	28.9 <sup>b-m</sup>	7.0 <sup>j-o</sup>	1547 <sup>ab</sup>	54.00	677
HQ 212 CT	4.7 <sup>bcd</sup>	1.14 <sup>p-t</sup>	82.5 <sup>e-o</sup>	29.5 <sup>a-j</sup>	7.1 <sup>i-m</sup>	1447 <sup>abc</sup>	54.00	625
PHY 370 WR	4.6 <sup>b-e</sup>	1.10 <sup>u</sup>	81.8 <sup>k-o</sup>	28.8 <sup>b-n</sup>	7.4 <sup>e-h</sup>	1427 <sup>a-d</sup>	53.10	604
DP 445 BR	4.5 <sup>b-h</sup>	1.15 <sup>n-s</sup>	83.1 <sup>a-l</sup>	28.1 <sup>f-n</sup>	8.0 <sup>abc</sup>	1420 <sup>a-e</sup>	54.00	622
FM 835 LLB2	4.7 <sup>bcd</sup>	1.21 <sup>c-i</sup>	82.8 <sup>b-n</sup>	28.5 <sup>d-n</sup>	6.8 <sup>m-s</sup>	1410 <sup>a-f</sup>	54.00	602
DP 174 RF	4.4 <sup>e-k</sup>	1.18 <sup>h-l</sup>	82.3 <sup>f-o</sup>	27.3 <sup>k-o</sup>	7.2 <sup>h-k</sup>	1408 <sup>a-f</sup>	53.75	615
PHY 310 R	4.6 <sup>b-g</sup>	1.12 <sup>stu</sup>	82.4 <sup>e-o</sup>	28.5 <sup>d-n</sup>	7.3 <sup>f-i</sup>	1395 <sup>b-g</sup>	53.75	602
FM 820 F	4.5 <sup>c-i</sup>	1.24 <sup>a</sup>	84.1 <sup>ab</sup>	30.5 <sup>a-d</sup>	6.4 <sup>t-w</sup>	1368 <sup>c-h</sup>	54.55	591
PHY 440 W	4.4 <sup>f-m</sup>	1.13 <sup>q-t</sup>	82.5 <sup>d-o</sup>	27.0 <sup>l-o</sup>	8.0 <sup>ab</sup>	1364 <sup>c-h</sup>	54.00	586
PHY 485 WRF	4.6 <sup>b-g</sup>	1.17 <sup>r-o</sup>	83.4 <sup>a-l</sup>	29.5 <sup>a-j</sup>	7.9 <sup>a-d</sup>	1340 <sup>c-l</sup>	54.25	575
ST 4427 B2RF	4.4 <sup>e-l</sup>	1.14 <sup>p-t</sup>	82.7 <sup>b-n</sup>	27.6 <sup>i-o</sup>	6.6 <sup>q-w</sup>	1318 <sup>c-j</sup>	54.00	570
PHY 315 RF	4.3 <sup>i-p</sup>	1.13 <sup>q-t</sup>	81.5 <sup>no</sup>	28.1 <sup>f-n</sup>	7.3 <sup>g-j</sup>	1305 <sup>c-k</sup>	53.95	566
PHY 480 WR	4.5 <sup>c-i</sup>	1.16 <sup>l-q</sup>	83.4 <sup>a-i</sup>	29.9 <sup>a-h</sup>	7.8 <sup>a-e</sup>	1299 <sup>c-k</sup>	54.25	559
FM 960 B2R	4.8 <sup>ab</sup>	1.21 <sup>d-i</sup>	83.8 <sup>a-e</sup>	29.5 <sup>a-j</sup>	5.8 <sup>y</sup>	1285 <sup>d-l</sup>	54.25	553
DP 515 BR	4.4 <sup>d-j</sup>	1.14 <sup>o-s</sup>	82.1 <sup>h-o</sup>	26.8 <sup>no</sup>	6.9 <sup>k-q</sup>	1283 <sup>d-l</sup>	53.75	551
FM 832 LL	4.5 <sup>c-i</sup>	1.19 <sup>f-j</sup>	83.0 <sup>a-m</sup>	30.8 <sup>abc</sup>	6.3 <sup>wx</sup>	1268 <sup>e-l</sup>	54.45	552
LINWOOD	4.9 <sup>a</sup>	1.11 <sup>tu</sup>	83.6 <sup>a-g</sup>	30.3 <sup>a-e</sup>	7.3 <sup>f-i</sup>	1267 <sup>e-l</sup>	54.35	554
ST 4357 B2RF	4.2 <sup>j-q</sup>	1.21 <sup>a-h</sup>	83.7 <sup>a-f</sup>	27.6 <sup>i-o</sup>	7.5 <sup>e-h</sup>	1264 <sup>e-l</sup>	54.30	546
FM 800 B2R	4.6 <sup>b-g</sup>	1.23 <sup>a-d</sup>	83.3 <sup>a-i</sup>	30.1 <sup>a-f</sup>	6.5 <sup>s-w</sup>	1254 <sup>f-l</sup>	54.25	539
AT SUMMI B2RF	4.3 <sup>h-o</sup>	1.13 <sup>r-u</sup>	83.0 <sup>a-l</sup>	26.8 <sup>mno</sup>	7.9 <sup>a-d</sup>	1240 <sup>g-l</sup>	54.20	533
CG 4020 B2RF	4.3 <sup>g-n</sup>	1.20 <sup>e-j</sup>	83.4 <sup>a-i</sup>	26.8 <sup>mno</sup>	7.3 <sup>f-i</sup>	1234 <sup>h-l</sup>	54.00	532
DP 161 B2RF	4.1 <sup>m-q</sup>	1.21 <sup>a-h</sup>	83.2 <sup>a-k</sup>	30.2 <sup>a-f</sup>	6.8 <sup>m-s</sup>	1220 <sup>h-l</sup>	54.45	530
FM 958 LL	4.5 <sup>d-i</sup>	1.20 <sup>e-j</sup>	83.3 <sup>a-i</sup>	30.9 <sup>ab</sup>	5.9 <sup>xy</sup>	1219 <sup>h-l</sup>	54.10	519
PHY 425 RF	4.5 <sup>c-i</sup>	1.16 <sup>k-q</sup>	84.1 <sup>ab</sup>	29.4 <sup>a-k</sup>	8.0 <sup>a</sup>	1219 <sup>h-l</sup>	54.45	530
ST 5327 B2RF	4.5 <sup>d-i</sup>	1.16 <sup>k-p</sup>	84.0 <sup>abc</sup>	29.0 <sup>b-l</sup>	7.3 <sup>f-i</sup>	1219 <sup>h-l</sup>	54.10	531
DP 117 B2RF	4.6 <sup>b-g</sup>	1.20 <sup>e-j</sup>	84.3 <sup>a</sup>	30.2 <sup>a-f</sup>	6.9 <sup>k-q</sup>	1206 <sup>i-m</sup>	54.35	521
AT APEX B2RF	4.2 <sup>l-q</sup>	1.22 <sup>a-f</sup>	83.3 <sup>a-j</sup>	26.8 <sup>mno</sup>	7.2 <sup>h-l</sup>	1190 <sup>i-m</sup>	54.20	513
FM 840 B2F	4.7 <sup>abc</sup>	1.24 <sup>ab</sup>	83.8 <sup>a-e</sup>	29.0 <sup>b-l</sup>	7.0 <sup>i-n</sup>	1188 <sup>i-m</sup>	54.10	511
DP 164 B2RF	4.1 <sup>opq</sup>	1.22 <sup>a-g</sup>	83.1 <sup>a-l</sup>	29.9 <sup>a-g</sup>	6.7 <sup>n-t</sup>	1185 <sup>i-m</sup>	54.45	513
FM 955 LLB2	4.8 <sup>ab</sup>	1.19 <sup>g-k</sup>	82.5 <sup>e-o</sup>	28.2 <sup>e-n</sup>	6.5 <sup>s-w</sup>	1179 <sup>j-m</sup>	53.75	495
TAMCOT 22	4.4 <sup>g-n</sup>	1.15 <sup>m-r</sup>	81.9 <sup>j-o</sup>	25.9 <sup>o</sup>	7.4 <sup>e-h</sup>	1175 <sup>j-m</sup>	53.75	502
DP 147 RF	4.2 <sup>m-q</sup>	1.21 <sup>b-h</sup>	81.6 <sup>mno</sup>	29.0 <sup>b-l</sup>	6.4 <sup>t-w</sup>	1170 <sup>i-n</sup>	53.95	501
DP 141 B2RF	4.1 <sup>pq</sup>	1.24 <sup>abc</sup>	82.6 <sup>c-o</sup>	29.1 <sup>b-k</sup>	6.9 <sup>j-p</sup>	1149 <sup>k-o</sup>	54.35	501
DP 121 RF	4.5 <sup>b-h</sup>	1.14 <sup>o-s</sup>	83.9 <sup>a-d</sup>	30.1 <sup>a-f</sup>	7.7 <sup>b-f</sup>	1149 <sup>k-o</sup>	54.20	495

Variety	Mic	Leng	Unif	Streng	Elong	Yield lb lint/A	Net loan (¢/lb)	Net return (\$/acre)
DP 167 RF	4.0 <sup>q</sup>	1.22 <sup>a-g</sup>	83.0 <sup>a-l</sup>	29.8 <sup>a-h</sup>	6.6 <sup>p-v</sup>	1134 <sup>l-o</sup>	54.45	490
ST 4554 B2RF	4.4 <sup>e-k</sup>	1.14 <sup>o-s</sup>	83.0 <sup>a-l</sup>	28.2 <sup>e-n</sup>	7.9 <sup>abc</sup>	1133 <sup>l-o</sup>	54.00	490
DP 143 B2RF	4.2 <sup>l-q</sup>	1.23 <sup>a-e</sup>	81.3 <sup>o</sup>	28.6 <sup>d-n</sup>	6.3 <sup>vw</sup>	1132 <sup>l-o</sup>	53.95	484
FM 958	4.6 <sup>b-f</sup>	1.16 <sup>l-q</sup>	82.2 <sup>g-o</sup>	28.7 <sup>c-n</sup>	6.3 <sup>vw</sup>	1060 <sup>m-p</sup>	53.75	457
FM 1880 B2F	4.3 <sup>g-n</sup>	1.23 <sup>a-d</sup>	82.8 <sup>b-n</sup>	27.9 <sup>g-o</sup>	6.9 <sup>l-r</sup>	1052 <sup>m-p</sup>	54.00	453
CG 3520 B2WRF	4.4 <sup>e-l</sup>	1.18 <sup>l-n</sup>	82.3 <sup>g-o</sup>	25.9 <sup>o</sup>	7.6 <sup>c-f</sup>	1013 <sup>nop</sup>	53.75	426
AT TOP PICK	4.4 <sup>e-l</sup>	1.18 <sup>i-m</sup>	82.9 <sup>b-m</sup>	29.6 <sup>a-i</sup>	7.3 <sup>g-j</sup>	1010 <sup>op</sup>	54.25	428
FM 9058 F	4.1 <sup>n-q</sup>	1.20 <sup>e-j</sup>	81.7 <sup>l-o</sup>	27.5 <sup>j-o</sup>	6.3 <sup>uvw</sup>	997 <sup>op</sup>	53.95	427
FM 9063 B2F	4.5 <sup>d-i</sup>	1.21 <sup>b-h</sup>	82.6 <sup>c-o</sup>	27.8 <sup>h-o</sup>	6.7 <sup>o-u</sup>	992 <sup>op</sup>	54.00	422
MAROON	4.4 <sup>f-m</sup>	1.17 <sup>j-n</sup>	83.3 <sup>a-j</sup>	28.6 <sup>d-n</sup>	7.1 <sup>i-m</sup>	963 <sup>p</sup>	54.00	403
AT TITAN B2RF	4.2 <sup>k-q</sup>	1.21 <sup>c-i</sup>	83.4 <sup>a-i</sup>	28.4 <sup>d-n</sup>	7.5 <sup>e-h</sup>	959 <sup>p</sup>	54.20	405
PHY 745 WRF	4.3 <sup>i-p</sup>	1.16 <sup>k-p</sup>	83.6 <sup>a-h</sup>	31.4 <sup>a</sup>	7.6 <sup>d-g</sup>	598 <sup>q</sup>	54.75	263
LSD (P=.05)	0.23	0.029	1.41	2.13	0.35	157.6		
P > F	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001		

Means in a column followed by the same letter are not significantly different by ANOVA.

Planting date: March 22, 2007  
Planting rate: 61,900/acre  
Row width: 38-inch  
Plot size: 2 rows x 40 feet  
Fertilizer: 125-22-0 + 6.7 lb zinc  
Herbicide: Trilin (10/2006) and Cotoran + Dual after planting  
Rainfall: February - August 10 = 27.92 inches  
Harvest date: September 10, 2007 with a 1-row I. H. Spindle picker