Evaluation of AZ7203 as a Pink Bollworm Resistant Cotton

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Summary

Previous laboratory evaluation of AZ7203 cotton had indicated a certain degree of resistance to infestations of pink bollworms. Field studies were made in 1981 to determine if this resistance held up under field conditions. When compared with DPL-61 in the field, AZ7203 did not express pink bollworm resistance. Bloom infestations were higher in DPL-61 in one sample date, however, boll infestations were equal in both varieties in all sample dates.

Sampling of squares for pink bollworm infestations were not conclusive as no consistant infestation was found in squares. An occasional larva could be found in a square but the numbers were too light to be relevant.

Bloom infestations determined by counting the number of white blooms and pink bollworm rosetted blooms were taken on June 20 and 30. Table 1 shows the bloom infestations for both dates and indicates that on June 20, or early bloom, the infestation rate was very low and that no difference occurred between DPL-61 and AZ7203. However, a higher rosetted bloom infestation in DPL-61 occurred in the June 30 sample. Rosetted bloom counts are an indication of the presence of pink bollworm and does not indicate potential infestation levels of subsequent boll infestations.

The higher percent of rosetted blooms in DPL-61 did not reflect in a higher boll infestation as indicated by Table 2. Initial boll infestations, taken on July 13, showed a light but equal infestation in both varieties. Subsequent boll samples taken July 22 and August 11 showed a rapidly increasing infestation but no differences in the degree of infestation between DPL-61 and AZ7203. Determination of damage by assessing the number of damaged locks and seeds, indicated that the severity of the infestation was equal in both treatments. Samples taken after August 11, not shown in the table, continued to indicate no differences in boll infestations or severity of damage.

Table 1. Number of White Blooms and Rosetted Blooms per Acre.

Date:	June 20		June 30	
Treatments:	DPL-61	AZ7203	DPL-61	AZ7203
Nr. White Blooms	6,191	7,010	14,914	14,969
Nr. Rosetted Blooms	12	10	871	327
% Bloom Infestation	0.19	0.14	5.84	2.18

Table 2. Pink Bollworm Infested Bolls and Damage.

Date:	July 13		July 22		August 11	
Treatments:	DPL-61	AZ7203	DPL-61	AZ7203	DPL-61	AZ7203
Infested Bolls/100	6.0	6.0	24.0	20.0	88.0	79.0
Larvae/Boll*	1.17	1.00	1.42	1.55	1.94	1.76
Damaged Locks/Boll*	1.17	1.00	2.21	2.10	2.36	2.20
Damaged Seeds/Boll*	1.00	1.00	3.42	3.45	3.16	2.90

*Calculated on the number of infested bolls.