

HOST PLANT RESISTANCE

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Advanced generation cotton progenies that carried all combinations of nectariless vs. nectaried, smoothleaf vs. hirsute leaf, okra leaf, and super okra leaf vs. normal leaf in AET-5 background were increased and tested.

AET-5 resistance to pink bollworm, along with nectariless, smoothleaf, and okra leaf, are being transferred into several advanced breeding stocks and cultivars.

Texas 39 progenies were selected for low seed damage. Five of 40 (Texas 167 x AET-5) F₃ plants had higher levels of resistance to pink bollworm (antibiosis) than both parents when infested artificially with pink bollworm larvae.

Eight smoothleaf breeding stocks, in comparison with their eight isolines, shed more squares indicating high lygus bug damage, but did not differ significantly in seed damage caused by pink bollworm, or in number of cotton leafperforator horseshoes.

One of eight high tannin cottons had more cotton leafperforator horseshoes than the DPL-61 check, but none had fewer. Six of the high tannin stocks had significantly higher seed damage than DPL-61, while the other two did not differ significantly from DPL-61. Among 25 early and miscellaneous breeding stocks and cultivars, only "Stoneville 213" and La Okra 500C had significantly less seasonal seed damage than DPL-61.

In a large plot test, AET-5 and the seven variants of AET-5, carrying all combinations of nectariless, smoothleaf, and okra leaf, had fewer cotton leafperforators than DPL-61. The AET-5 nectariless-smoothleaf combinations had fewer horseshoes than the nectaried, hirsute combinations. "Deltaphine NSL" (nectariless, Smoothleaf) had significantly fewer horseshoes than DPL-61 and AET-5.

Progenies of Texas 39, selected in 1981 for low seed damage, were infested artificially with pink bollworm eggs in 1982 to determine their level of antibiosis relative to that of DPL-61. Eight of 30 advanced generation nectariless progenies from (AET-5 x 24-8ne) and (AET-5 x DES 24ne) had less seed damage than the susceptible 24-8ne and DES 24ne, but no less damage than AET-5.