

**Pheromone and Insecticide Treatments  
of Nectariless and Nectaried Varieties**

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Summary

The pink bollworm resistant (nectariless) variety 'Deltapine NSL' yielded as much lint as the standard 'Deltapine-61' (nectaried) under treatments of conventional insecticides or gossyplure and yielded significantly more lint in untreated plots.

Methods

Three 5-acre fields at the Maricopa Agricultural Center were used to compare Deltapine NSL (NSL), a nectariless variety, and Deltapine 61 (DPL-61), a nectaried variety, for resistance to damage by the pink bollworm (PBW). Each field was divided into 3 treatment areas, each area subdivided in NSL and DPL-61 varieties. One area received an application of gossyplure in Shin-Etsu dispensers (rate of 400 dispensers containing 30 g AI/acre), a second area received conventional insecticide applications (9 applications during the season) and the third area was held untreated.

The areas were arranged so that the gossyplure-treated area was at one side of the field with an untreated cotton buffer zone between the gossyplure and the insecticide areas. The untreated area was arranged on the side of field opposite the gossyplure area and was immediately adjacent to the insecticide area.

Although all fields were planted in early April, an error in planting one field had to be corrected by replanting on June 4. Samples of 100 bolls/plot were collected weekly during the season and incubated for determination of infestation. Yield was determined from 3-200 row feet samples mechanically picked in October (November for the late field). Lint yield and seed damage (x-ray analysis) were determined from the yield samples.

Results

The insecticide-treated plots, regardless of variety, averaged higher yields than the other treatments except for the untreated

NSL plots which were not significantly different (Table 1). Seed damage and the number of PBW/100 bolls were significantly greater in the gossyplure treated plots than in the insecticide treated plots and appeared to be greater than in the untreated plots, but differences were not significant.

In our design, the gossyplure treated area was placed next to untreated DPL-61 used as a buffer between the remaining areas. However, the untreated area was separated from the same untreated DPL-61 by the insecticide treated area which presumably resulted in unequal invasion of the test areas by moths from the untreated buffer. Nevertheless, the results indicate that the NSL variety was superior in lint yield to DPL-61 in untreated areas and equivalent in treated areas.

**Table 1. Field Plot Comparison of NSL and DPL-61 Treated with Insecticide, Gossyplure, or Untreated (Average of 3 Fields with 0.5 Acre Treatment Blocks)\***

Treatment	Variety	Seed cotton (kg/ha)	Seed damage (%)	PBW/100 bolls (no.)
Insecticide	NSL	1,473 a	1.8 c	4 b
	DPL-61	1,553 a	1.6 c	7 b
Gossyplure	NSL	989 b	7.7 ab	30 a
	DPL-61	1,153 b	9.2 a	34 a
Untreated	NSL	1,363 a	4.5 bc	13 ab
	DPL-61	1,134 b	2.7 c	17 ab
Means	NSL	1,275	4.7	16
	DPL-61	1,279	4.5	19

\* Means within columns followed by a common letter are not significantly different at the 0.05 level.