

# Managing Thrips Where It Really Matters: Different Options for Early and Late Planted Cotton in Virginia and North Carolina

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## Objective:

To evaluate at-planting granular insecticides, seed treatments, and foliar sprays for thrips (*Frankliniella fusca*) management in early and late planted cotton.

## Abstract:

Field trials were conducted in Virginia and North Carolina to assess efficacy of selected insecticides for management of thrips populations in early and late planted cotton. We expected that early planted cotton would be subjected to higher levels of thrips pressure, and for a longer period of time, so some treatments included higher amounts of active ingredient compared with late-planted cotton. Immature thrips levels with both early (late April) and late (late May) planting dates were lower than mid planting dates (early to mid May) in both NC and in VA. The VA tests indicated the maturity of the late planted test had already matched that of the early planted test at 10+ wks. after planting. In both the VA and NC tests, yields trended higher in the later planted tests. In the late planted test in NC, because of both rapid growth and exposure to low thrips levels, none of the at-planting treatments out-yielded the untreated check.

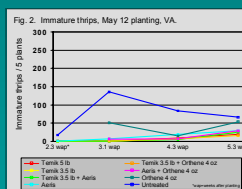
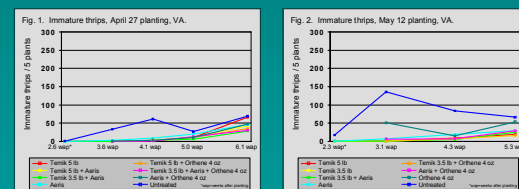
## Methods:

*Tidewater Agricultural Res. and Extension Center, Suffolk, VA:* 'ST 4427 B2RF' was planted 27 Apr. (early planting) and 12 May (late planting) in plots four rows by 35-ft long (36-inch row centers), with each planting arranged in a four-replicate randomized complete block design. Both plantings were located in the same field. Treatments are provided in Fig. 1. Thrips populations were assessed by rinsing and counting adults and immatures from five seedlings cut from each plot on five dates. Plant injury was assessed on four dates visually using a 0-5 plant injury scale. Stand counts were taken on 19 May (early planting) and 26 May (late planting). Nodes above upper-most first position white flower (NAWF) (based on sampling six plants per plot) and nodes above upper-most first position cracked boll (NACB) (based on sampling 10 plants per plot) were used to assess plant maturity. Plots were irrigated 1-inch on 15 Jul. Baythroid XL at 4 oz/A was applied for lepidopteran and hemipteran pest management. The early planting was defoliated on 24 Sep. and the late planting on 8 and 20 Oct. Cotton was harvested with a spindle picker on 8 Oct. (early planting) and 4 Nov. (late planting). Treatment lint yields were compared using PROC GLM (LSD).

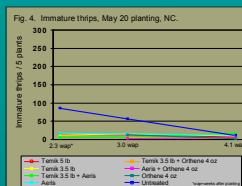
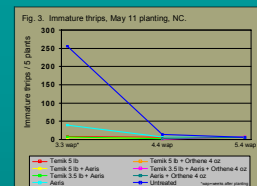
*Upper Coastal Plain Res. Station, Rocky Mount, NC:* 'ST 4427 B2RF' was planted 11 Apr. (early planting) and 20 May (late planting) in plots four rows by 40-ft long (36-inch row centers), with the same experimental design, treatments and thrips assessments as indicated above. Treatments are provided in Fig. 3. In the NC tests, plant dry weights were also taken as part of thrips sampling. No late season applications were required for Lepidoptera or for hemipterans at this location. Both tests were defoliated on 1 Oct. The middle two rows of each plot were harvested with a spindle picker on 21 Oct. in both tests. Treatment lint yields were compared using PROC GLM (LSD).

## Results:

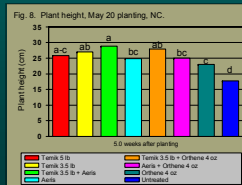
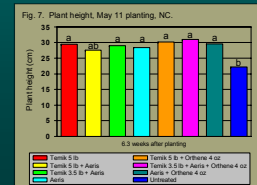
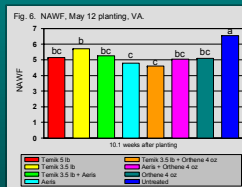
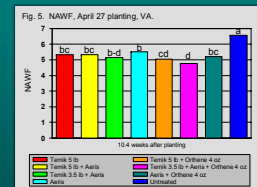
Because the 3 to 4 week after planting (wap) immature thrips assessment in the Virginia late planting test was taken during a period of high thrips establishment and reproduction, immature thrips levels were higher than in the early planted test, as indicated in the respective untreated plots (Figs. 1 & 2).



In the North Carolina tests, because the "early" planted test was essentially the same as the VA "late" test (April 11 and 12, respectively), the early NC test also showed high thrips levels (Fig. 3), while the late planted NC test avoided most of this major thrips flight, which was reflected in the lower levels of immature thrips in the untreated check (Fig. 4).

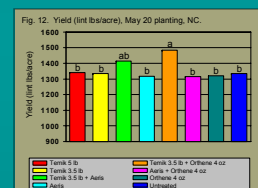
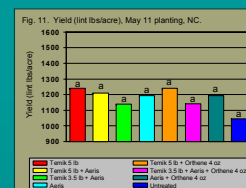
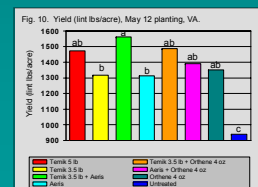
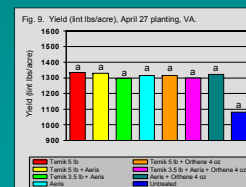


By the 10+ week maturity assessment of NAWF in VA, the late planted test had "caught up with" the early planted test (Figs. 5 and 6). In the NC tests, plant heights for the late planted test likewise were almost the same height at 5 weeks as the early planted test at 6 weeks (Figs. 7 and 8).



## Results: (cont.)

In both VA (the high input treatments Temik 15G @ 5.0 lb; Temik 3.5 lb. + Aeria and Temik 3.5 lb. + Orthena) and in NC (all treatments), the later planting date showed higher yields than the early planting dates (Figs. 9 to 12). In the tests which seemed to avoid high thrips levels (the early April 27 test in VA and the late May 20 test in VA), few differences were noted between treatments (Figs. 9 and 12). Additionally, in the late planted NC test, the impact of thrips damage on yield was minimized, with few yield differences noted between any of the treatments and the untreated check (Fig. 12).



## Conclusions:

Because 2009 was the initial year of a planned 3-year assessment of the relationship between planting dates and thrips management options, any conclusions must be tentative and drawn cautiously.

- Immature thrips levels with both early (late April) and late (late May) planting dates were lower than in mid planting dates (early to mid May) in both NC and in VA.
- The VA tests indicated the maturity of the late planted test had already matched that of the early planted test at 10+ week after planting.
- In both the VA and NC tests, yields trended higher in the later planted tests.
- In the late planted test in NC, because of both rapid growth and to low thrips levels, none of the at-planting treatments out-yielded the untreated check statistically.
- Additional applied research is planned to further determine if a system of planting date-based at-planting insecticide choices can be developed for the Virginia / North Carolina area.