

VIRGINIA PEANUT GROWERS ASSOCIATION, INC./NATIONAL PEANUT BOARD
Final Report, Grant Code 449221

PROJECT TITLE: Determining the best alternatives for controlling thrips in peanut

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LOCATION: Virginia Tech Tidewater Agricultural Research and Extension Center, Suffolk, VA

FINAL REPORT: The purpose of this project was to find alternatives to aldicarb (i.e., Temik) that equal in their ability to control thrips and result in comparable yields. To do this, we conducted three peanut field trials at our location. Data are included below. Final steps to complete this project included interpreting and summarizing results, which were presented to Growers, Extension Agents, Crop Advisers, and other clientele at the State Peanut Production Meeting in Franklin, VA, on February 2, 2015. Additionally, results from this project were used to update Extension recommendations for peanut in the Field Crops Pest Management Guide, and trial summaries were included in the annual research summary book, Insect Pest Management in Virginia Cotton and Peanut.

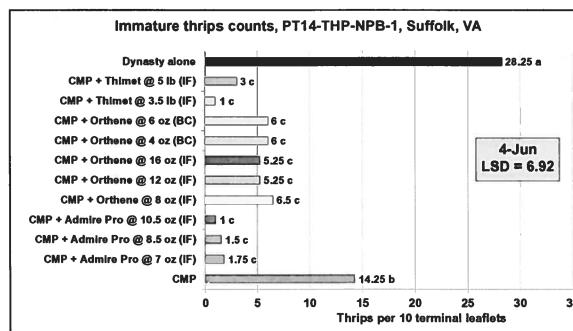
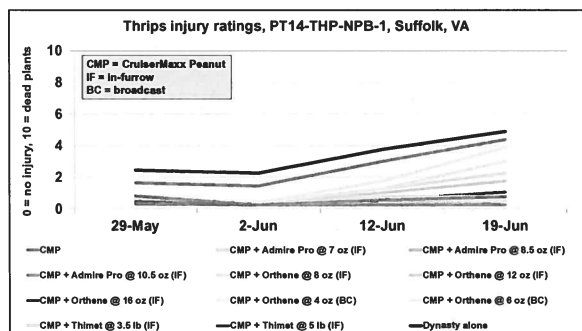
PROJECT SUMMARY: Trial One was designed to evaluate options to maximize the effectiveness of the CruiserMaxx seed treatment. **Figure 1** shows results where plots treated with CruiserMaxx were given additional applications of Orthene (foliar broadcast), or Thimet or Admire Pro (in-furrow). Data on the thrips injury to seedlings showed that CruiserMaxx alone was not much better than the untreated control in reducing seedling injury, and there was a rate response with Orthene treatments—with the 12 and 16 oz rates providing better control than the 4 and 6 oz rates. The best control was achieved when either Thimet (at either 3.5 or 5 lb) or Admire Pro (at either 8.5 or 10.5 oz) were added to CruiserMaxx plots and the best performance was shown by the CruiserMaxx plus Admire Pro at the 10.5 oz rate. Thrips counts paralleled these results with the CruiserMaxx alone treatment having the highest number of immature thrips on June 4 (14.25 per 10 terminal leaflets), and the fewest when either Thimet or Admire Pro were added to the treatment (1 – 3 per 10 terminal treatments). There was no statistical difference in pod yields among treatments, but the untreated control yielded the least (numerically).

Trial Two was designed to evaluate options to maximize the effectiveness of Admire Pro. **Figure 2** shows results where plots treated with Admire Pro at different rates were given applications of Orthene (foliar broadcast) at different rates. Data on the thrips injury to seedlings showed that all treatments were close in their effectiveness in reducing seedling injury compared with the untreated control, but the best results were achieved with Admire Pro applied at the high rate (10.5 oz) followed by a foliar application of Orthene at 6 oz. Thrips counts showed that all treatments reduced numbers of immature thrips (from 0.75 – 4 per 10 terminal leaflets) compared with the untreated control (15.25 per 10 terminal leaflets). There was no difference among the treatments, but the high rate of Admire Pro (10.5 oz) followed by the 6 oz rate of Orthene had the fewest immatures (0.75 per 10 terminal leaflets). As in Trial One, there was no significant difference in pod yields among treatments.

Trial Three was designed to compare treatment combinations that were considered to be high-end in terms of input costs—that is—each treatment used the highest labeled rates of the different insecticide combinations. **Figure 3** shows the results. Even given these high inputs, there were significant differences among the treatments in several of the responses that were measured. Data on thrips injury to seedlings showed that the CruiserMaxx plus Orthene at 16 oz in-furrow plus Orthene foliar treatment had more seedling injury than all other treatments, and the best control was achieved with Cruiser Maxx plus Admire Pro at 10.5 oz plus Orthene at 6 oz, and Admire Pro at 10.5 oz plus Orthene at 6 oz. Counts of the immature thrips showed that all treatments reduced numbers significantly compared with the untreated control (67.25 per 10 terminal leaflets) and the best control was achieved with Admire Pro at 10.5 oz plus Orthene at 6 oz (5.75) and Cruiser Maxx plus Admire Pro at 10.5 oz plus Orthene at 6 oz (5.25 per 10 terminal leaflets). In this trial all treatments resulted in yields that were significantly higher than the untreated control. Averaged across all treatments they resulted in 1,360 lb more pods per acres than the untreated control. The highest yields were provided by Admire Pro at 10.5 oz plus Orthene at 6 oz (5,911 lb per acre) and CruiserMaxx plus Admire Pro at 10.5 oz plus Orthene at 6 oz (6,252 lb per acre).

Brief conclusion: This project endeavored to evaluate all of the insecticides, alone and in combinations, that are currently labeled for use in peanuts for efficacy against tobacco thrips. These treatments were set up in three field trials. Thrips injury to seedlings, thrips counts, incidence of tomato spotted wilt virus and pod yields were measured. Over all trials, the general findings point to the treatments below as providing the best control of thrips and the highest pod yields: 1) CruiserMaxx + Admire Pro at 10.5 oz (in-furrow) + Orthene at 6 oz (foliar broadcast); 2) CruiserMaxx + Admire Pro at 10.5 oz (in-furrow); 3) CruiserMaxx + Thimet at 3.5 or 5.0 lb (in-furrow); 4) Admire Pro at 10.5 oz (in-furrow) + Orthene at 6 oz (foliar broadcast). From these results, growers will need to make their selection based on what equipment and insecticide application systems they prefer, and comparative product costs.

NOTE: Although ratings of the incidence of tomato spotted wilt virus were taken in all experiments, the overall incidence levels were too low during the 2014 growing season to allow for meaningful treatment comparisons.



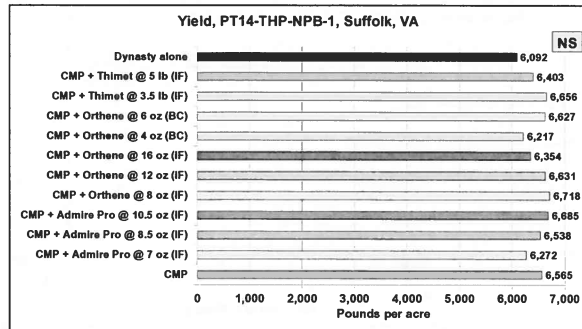
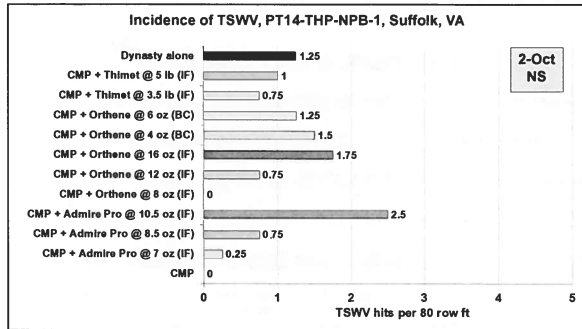


Figure 1. Thrips data for the trial, "PT14-THP-NPB-1, Best combinations to boost seed treatment efficacy and yield."

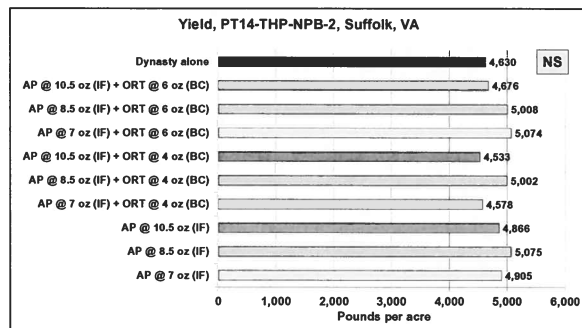
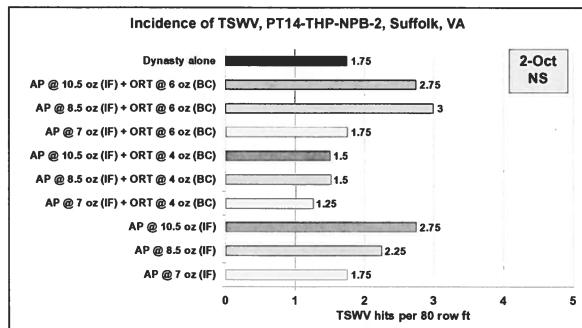
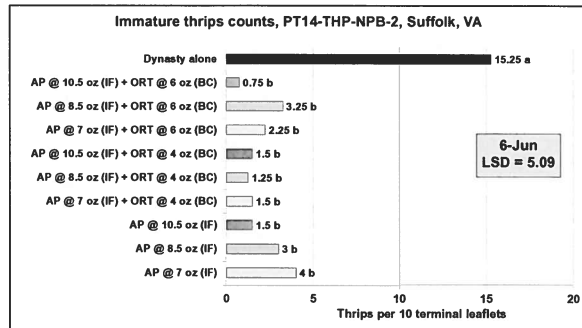
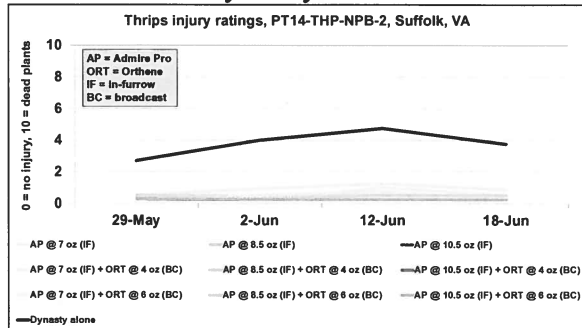
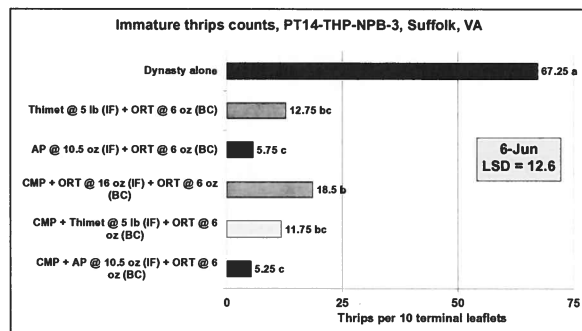
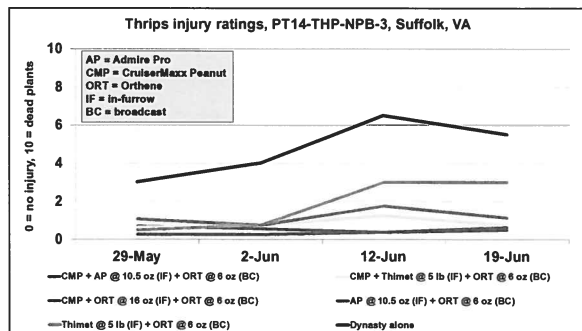


Figure 2. Thrips data for the trial, "PT14-THP-NPB-2, Best combinations to boost Admiral Pro efficacy and yield."



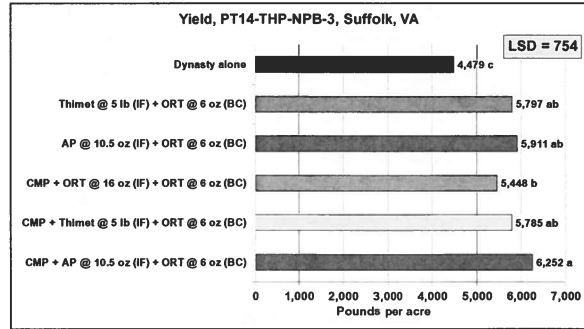
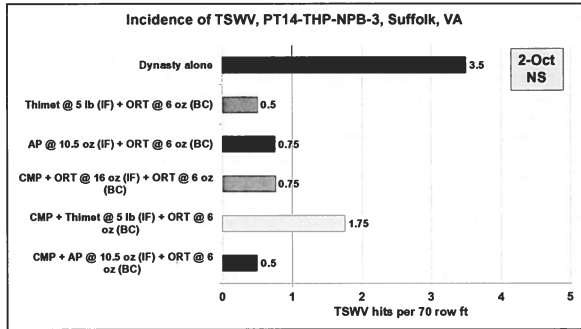


Figure 3. Thrips data for the trial, “PT14-THP-NPB-3, High-end input programs.”