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ABSTRACT

PROJECT TITLE: Evaluation of Temik 15G Alternatives for Thrips Management in Peanut, Year 2

PROJECT INVESTIGATOR: D. Ames Herbert, Jr., Extension Entomologist, Virginia Tech Tidewater Agricultural Research and Extension Center, Suffolk, VA

SUMMARY: The loss of Temik necessitates finding effective and economic alternatives for peanut farmers. Temik was highly effective in reducing thrips numbers, minimizing plant damage caused by direct thrips feeding, and in reducing incidence of Tomato spotted wilt virus transmission by thrips. Temik's replacement, Memik (MEY Corporation USA), was not available in 2012 and will not be available in 2013 or likely 2014 (according to various sources). The other legal in-furrow options for thrips management in peanut in Virginia are Admire Pro and Thimet 20G (acephate has label issues). Our research is showing that certain new treatments are just as effective as currently labeled standards. Most notably, a seed treatment that we have been testing from Syngenta for several years has been released (on a limited basis in 2012) as CruiserMaxx Peanut Custom Blend—Powder, and is quite effective for thrips management. A CruiserMaxx pre-mix liquid is slated for launch in 2013.

Results of 2012 field trials showed that several options were successful in managing thrips populations. Verimark 20SC (cyantraniliprole, Dupont) applied at 13.5 oz/A into the seed furrow resulted in significantly lower thrips populations, less plant injury, decreased incidence of tomato spotted wilt and alone or tank mixed with Proline 480SC, had yields equal to or better than those achieved with Thimet. Overall, Cruiser seed treatments did not perform as well as Thimet or Temik in reducing thrips numbers or plant injury, but were significantly better than untreated controls and resulted in pod yields that were in the top range of treatments tested.

In a large replicated on farm trial, Trilex Optimum seed treatment with Thimet at 5 lb/acre was compared with CruiserMaxx Peanut Custom Blend—Powder (seed treatment). Thrips injury ratings were lower in the Thimet treatment than in the CruiserMaxx seed treatment, and yields (based on 1890 row ft harvested) were significantly higher in the Thimet treatment (5682 lb/acre) than the CruiserMaxx seed treatment (5555 lb/acre). In a small plot assessment at the same farm the Cruiser seed treatment (A17461) was equal to Thimet in reducing plant injury.

Conclusions from this work are that although there are some options that show promise for 'replacing' Temik for thrips control in peanut, there is still some variability in how they perform over years and locations. Our challenge is to continue working with these to see what things might be done to improve these options, given that aldicarb will not be available in the short terms, and perhaps, never. We want to further explore what practices may improve the activity of these products, or if combinations with other materials or foliar sprays may increase their efficacy.

FINAL REPORT

VIRGINIA PEANUT GROWERS ASSOCIATION, INC./NATIONAL PEANUT BOARD Project Number 457630

PROJECT TITLE: Evaluation of Temik 15G Alternatives for Thrips Management in Peanut, Year 2

PROJECT INVESTIGATOR: D. Ames Herbert, Jr., Extension Entomologist, Virginia Tech Tidewater Agricultural Research and Extension Center, Suffolk, VA

COOPERATING PERSONNEL: None

OBJECTIVES: To conduct a second year of evaluating new insecticide seed and liquid in-furrow treatments for management of thrips and TSWV in peanut.

PROCEDURES: Investigation of Temik alternatives for thrips management led to three peanut field trials at the Tidewater Agricultural Research and Extension Center in Suffolk (PT12-THP-1, 2, and 6) and two in Surry County with cooperators Steven and Michael Pittman (PT12-THP 8 and 9). Data included thrips counts from unopened terminal leaflets, thrips plant injury ratings on a scale of 0 = no thrips induced plant injury to 10 = dead plants, stand counts, tomato spotted wilt incidence, and yield. Data were analyzed using ANOVA and LSD statistical procedures.

Planting dates were from May 2-4 at Suffolk. Conventional seeding rates and weed, disease, and late-season insect (leafhopper and corn earworm) management practices were used. Insecticides that were evaluated for thrips control included liquid in-furrow applications of Verimark 20SC (with and without Proline 480SC and Optimize Lift), foliar broadcasts applications of Benevia 10 OD, and multiple seed treatments (including A17461). Conventional in-furrow insecticides (Thimet and Temik) were included for comparison in some tests.

RESULTS and DISCUSSION: In “PT12-THP-1” (Fig. 1) multiple rates and formulations of Cyazypyr (Benevia 100D, Verimark 20SC) (common name = cyantraniliprole) were evaluated for efficacy against thrips in ‘CHAMPS’ peanut. Insecticide treatments had significantly lower (better) thrips injury ratings than the untreated control on all sample dates, with differences between treatments. The mean number of immature thrips per 10 leaflets reached 9.3 in the untreated control on May 30; the range for treatments was 0 to 5.3. Tomato spotted wilt hits were significantly reduced in the treatments on August 3 (data not shown) and September 10 relative to the untreated control. Mean yields ranged from 5788 to 6247 lb/acre, with no significant differences in this test.

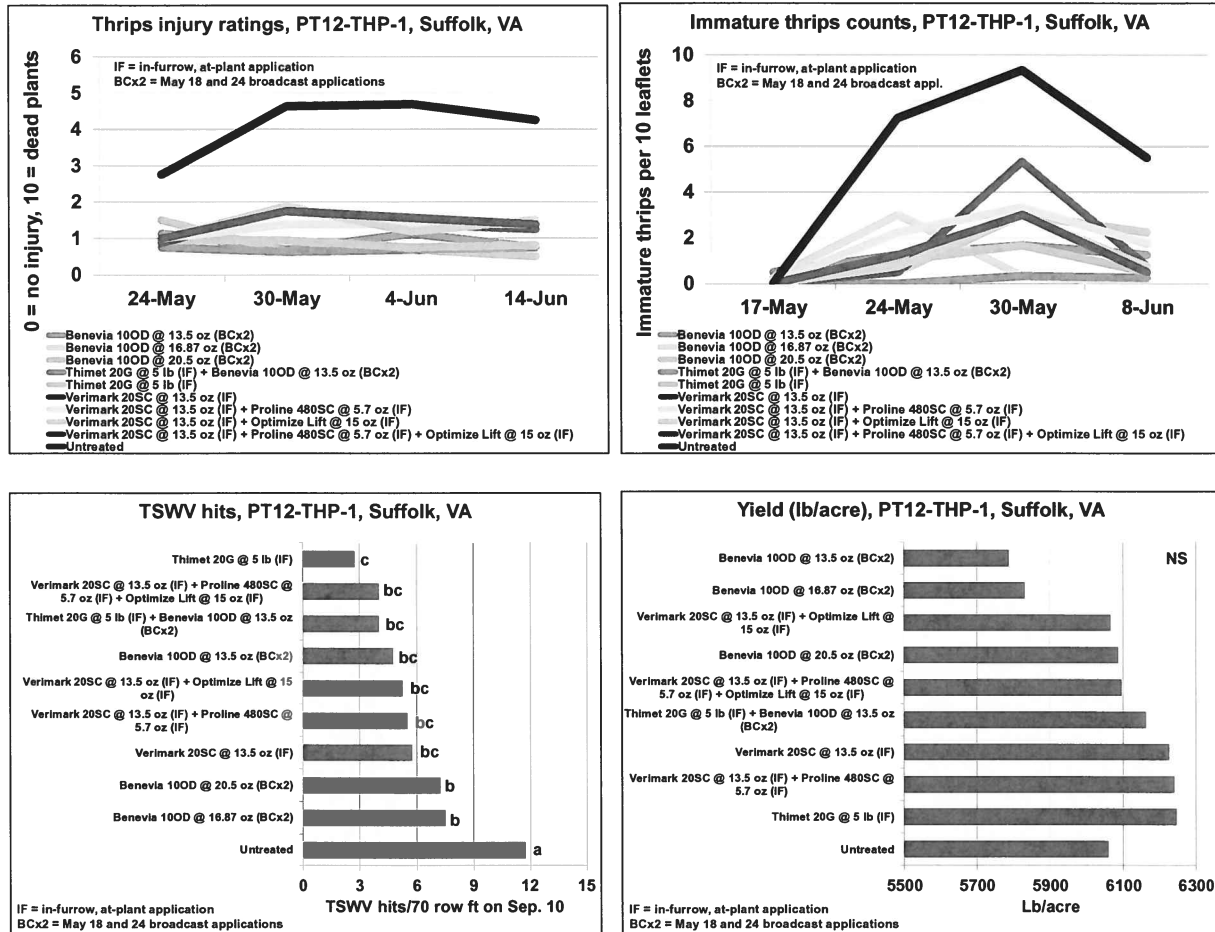


Fig. 1. Evaluation of multiple rates and formulations of Cyazypyr (cyantraniliprole) for thrips management in peanut.

In “PT12-THP-2” (Fig. 2), insecticide seed treatments were evaluated for thrips control in ‘Bailey’ peanut. Thrips injury ratings were lower in the Thimet and Temik treatments than in the Cruiser or A17461 peanut seed treatments, with the Cruiser and A17461 treatments better than the untreated control and Dynasty alone. Immature thrips counts were very low on May 17 (range = 0 to 0.25 per 10 leaflets) and ranged from 2.5 to 13.25 on May 31 (with no differences between treatments on that date). Tomato spotted wilt on September 10 was significantly reduced in the treatments compared with the untreated control, with no differences between treatments. Yields were not significantly different (range = 5348-5985 lb/acre).

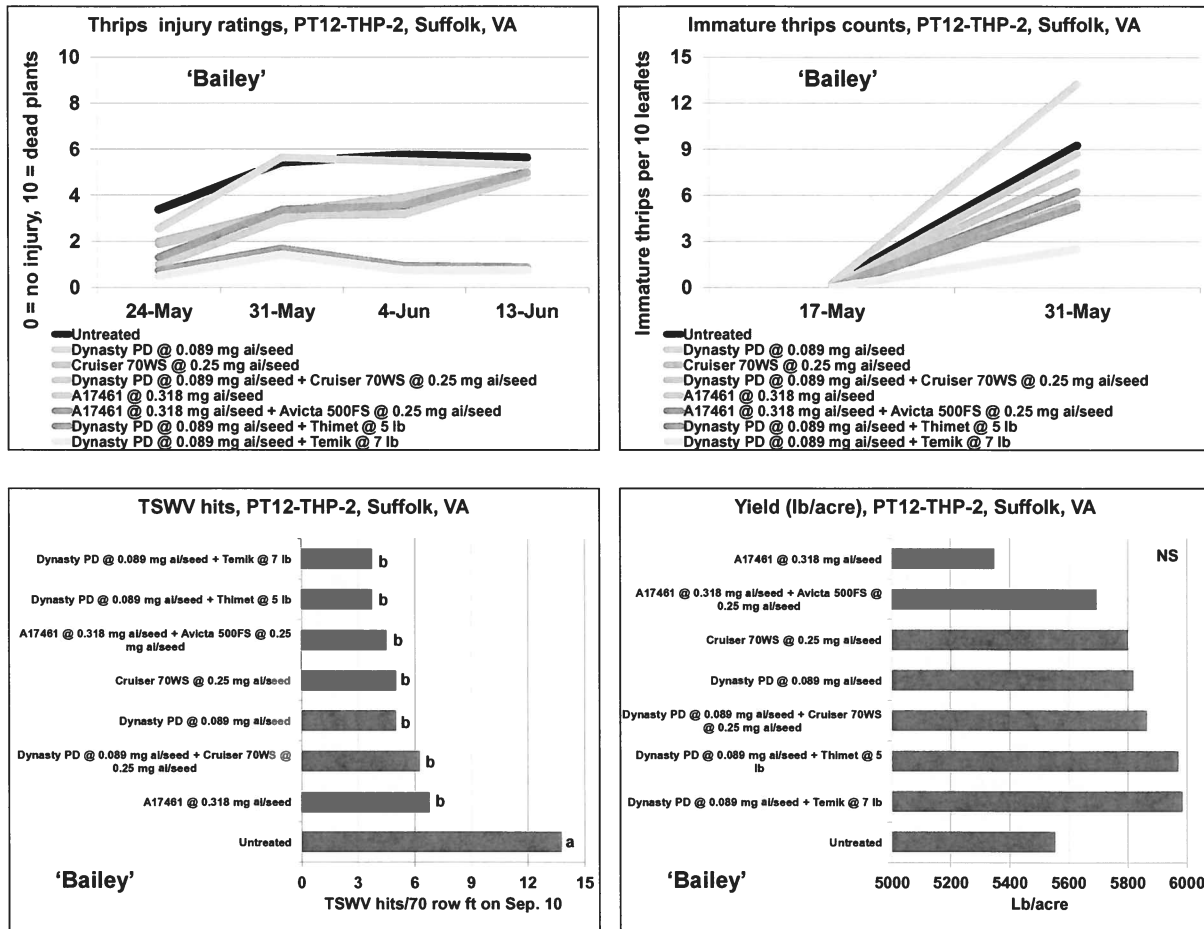


Fig. 2. Evaluation of seed treatments for thrips management in peanut.

The same seed treatments from “PT12-THP-2” were evaluated again in “PT12-THP-6” (Fig. 3), but with ‘Phillips’ peanut instead of ‘Bailey’. Thrips injury ratings were again best in the Temik and Thimet treatments, with A17461 and Cruiser seed treatments still performing better than the untreated control or Dynasty alone treatment. There were no immature thrips present on May 17, but on May 31 the range was 6.0 to 24.25 per 10 leaflets. One A17461 and one Cruiser treatment had immature thrips counts statistically similar to Temik and Thimet. There was more tomato spotted wilt in this test, with significantly fewer hits in the treatments vs. the untreated control on both August 3 (data not shown) and September 10, with no differences between treatments. There were no significant differences in yield (range = 4996 to 5394 lb/acre).

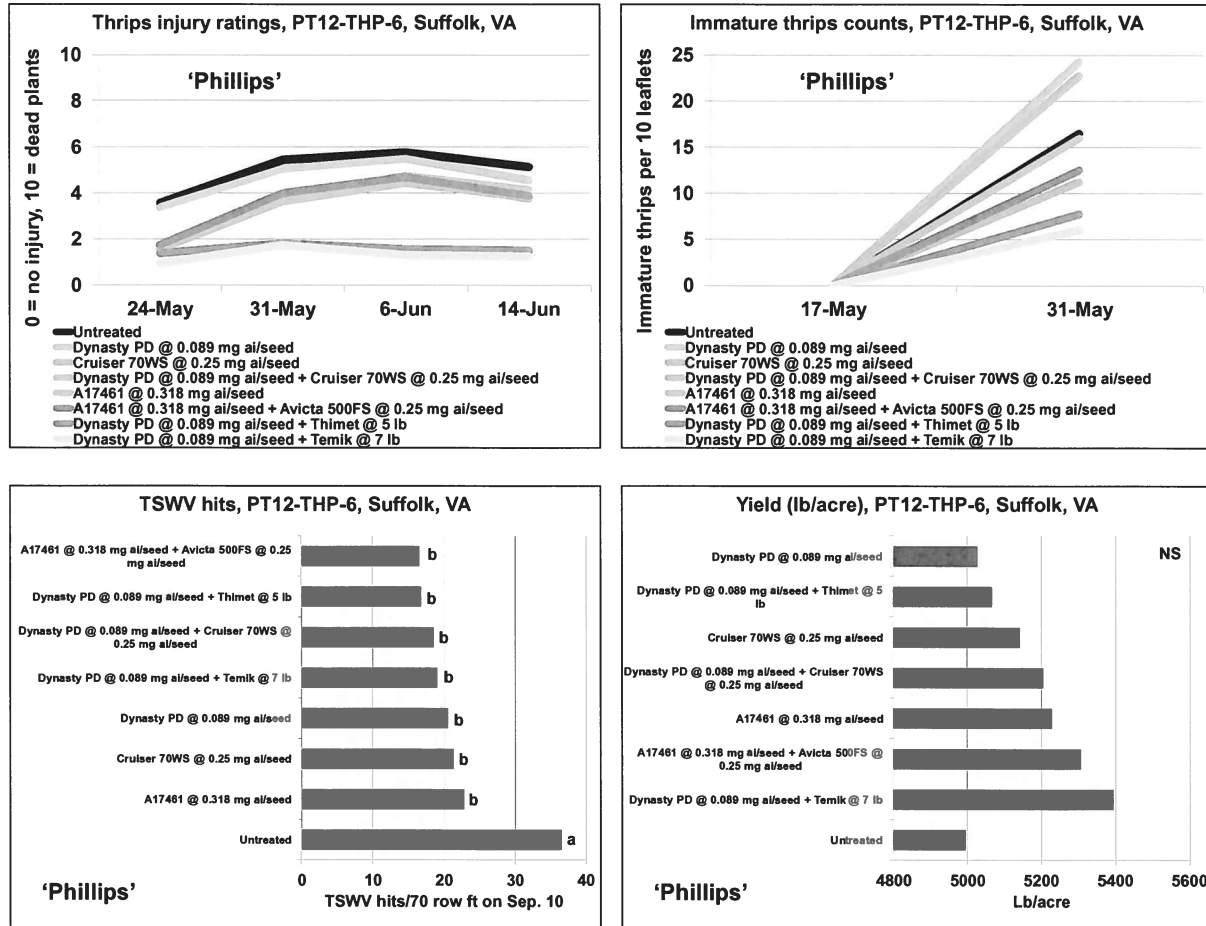


Fig. 3. Evaluation of seed treatments for thrips management in peanut.

The on-farm (Surry County) replicated-strip test “PT12-THP-8” compared Trilex Optimum plus Thimet at 5 lb/acre (the farmers’ normal thrips management program) with CruiserMaxx Peanut Custom Blend—Powder (seed treatment) (Fig. 4). Treatments were applied by Crocker Brothers in Windsor, VA. Optimize Lift at 14.5 oz/acre and Proline at 5.7 oz/acre were applied as liquid in-furrows (at planting) for both treatments in this test. Thrips injury ratings were lower in the Thimet treatment than in the CruiserMaxx seed treatment, and yields (based on 1890 row ft harvested) were significantly higher in the Thimet treatment (5682 lb/acre) than the CruiserMaxx seed treatment (5555 lb/acre).

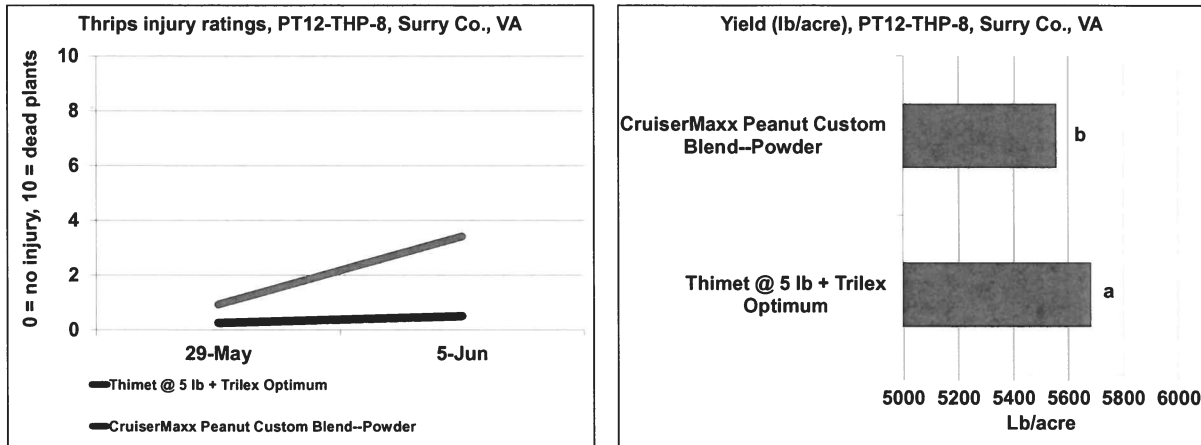


Fig. 4. On-farm evaluation of seed treatments for thrips management in peanut.

The on-farm (Surry County) replicated-strip test “PT12-THP-9” compared granular in-furrow Thimet treatments with A17461 (a seed treatment) on ‘Bailey’ and ‘Phillips’ peanut. Dynasty and Trilex were also evaluated. Thrips injury ratings were very low for Thimet and A17461 treatments on May 29 (0.25) and June 5 (0.50), all significantly better than the Dynasty alone or Trilex treatments (Table 1). Yields were not determined for this test because each treatment was a single row and treatments could not be separated after digging.

Table 1. Thrips injury ratings¹, PT12-THP-9 (Surry Co., VA).

#	Material	Rate	Variety	May 29	Jun 5
1	Dynasty PD	0.089 mg ai/seed	Bailey	1.00 a	3.63 a
2	A17461	0.318 mg ai/seed	Bailey	0.25 b	0.50 c
3	Dynasty PD + Thimet 20G	0.089 mg ai/seed 5 lb/A	Bailey	0.25 b	0.50 c
4	Trilex		Bailey	1.00 a	3.50 ab
5	Dynasty PD	0.089 mg ai/seed	Phillips	1.13 a	3.38 b
6	A17461	0.318 mg ai/seed	Phillips	0.25 b	0.50 c
7	Dynasty PD + Thimet 20G	0.089 mg ai/seed 5 lb/A	Phillips	0.25 b	0.50 c
8	Trilex		Phillips	1.00 a	3.63 a
	LSD			0.47	0.22

Means within a column followed by the same letter(s) are not significantly different (Protected LSD, P=0.05).

¹*Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants.*

CONCLUSIONS: The loss of Temik necessitates finding effective and economic alternatives for peanut farmers. Temik was highly effective in reducing thrips numbers, minimizing plant damage caused by direct thrips feeding, and in reducing incidence of Tomato spotted wilt virus transmission by thrips. Temik’s replacement, Memik (MEY Corporation USA), was not available in 2012. The other legal in-furrow options for thrips management in peanut in Virginia are Admire Pro and Thimet 20G (acephate has label issues). Our research is showing that certain new treatments are just as effective as currently labeled standards. Most notably, a seed treatment that we have been testing from Syngenta for several years has been released (on a limited basis in 2012) as CruiserMaxx Peanut Custom Blend—Powder, and is quite effective for thrips management. A CruiserMaxx pre-mix liquid is slated for launch in 2013.