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Oklahoma State University
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Stillwater, OK 74078

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Thrips Damage Potential in Peanut

Phil Mulder, Extension Entomologist

It is time to watch for thrips damage on peanut. Most thrips problems in Oklahoma peanut seem to be related to thrips migrating from wheat as it matures in the spring. They rasp tender leaves and terminals with their sharp mouthparts and feed on the juices. Leaves may turn brown on the edges, develop a silvery color, or become distorted and curl upward (commonly referred to as 'pouts'). Light thrips infestations can delay plant growth and retard maturity. Heavy infestations may kill terminal growth or even entire plants. Damaged terminals can take on an almost burned appearance. The duration and intensity of thrips infestations vary greatly according to season and geographic location. Once peanut plants are four to six weeks old, they tend to outgrow thrips damage and recover.

Scouting for thrips can be quite difficult. However, it is important to catch significant populations before economic damage occurs. Start looking for thrips as soon as plants begin to emerge. Look for thrips in the newest growth, usually in the unfurled quadrifoliate leaves. Work on hands and knees. Shake plants over a piece of white paper. If you see small, slender objects crawling, these are usually thrips. If there is residue of sand or soil on the plants, the thrips will be harder to see. Windy conditions require pulling some plants, placing them in a plastic bag, taking them out of the wind and examining the plants for thrips. Look for early signs of damage.

If peanut is treated with a systemic insecticide at planting, it should be scouted for thrips two weeks after plants emerge. If live, immature thrips are found, it means that thrips are laying eggs in the field and residual properties of the seed treatment may have elapsed. It is extremely rare that a follow-up foliar application would be necessary. In fact, with rare exception, is there any need to use systemic, at-plant applications as insurance against a problem. The major drawback to these treatments is cost and a lack of consistent yield increases from their use.

Table 1 presents the results of varying levels of insecticide management on thrips in a conventional-tilled peanut field in Perkins, Oklahoma from 2003. Runner-type peanuts (Tamrun 96) were planted on 23 May at the Perkins Research Station. Each plot consisted of peanuts planted four rows wide and 25 ft. long. Treatments were replicated four times and placed in a randomized complete block design. An in-furrow application of Temik was made before planting by using a hand-powered Precision Granular Applicator. Application was made in a seven inch band, over the open furrow, and calibrated to deliver the prescribed amount of insecticide. The furrow was then covered by hand using a garden hoe. The in-furrow application of Orthene was made with a CO_2 pressurized applicator calibrated to deliver15 gpa. The post-emergent application of Orthene and Mustang-Max (2 rates) were applied after 90% emergence on 17 June using a CO_2 wheelbarrow sprayer calibrated to deliver 20 gpa. Monitoring for thrips populations occurred at 3, 7, 14, and 21 days after treatment (DAT) with post-emergent applications. Yield and grade were determined by digging, combining, drying, and weighing peanuts from the two middle rows of each plot.

Table 1 shows the effects of insecticides on early-season thrips populations. Populations were relatively low and significant differences were revealed at 3 DAT up to 14 DAT. No differences were found 21 DAT. During the initial week following application of the post emergent treatments, the lowest thrips populations were recovered from peanuts treated with Temik (Table 1). During that time, peanuts treated with Temik had significantly fewer thrips than those treated with either Orthene (IF) or Mustang-Max (low rate). Similarly, peanuts treated with Temik also had significantly fewer thrips than those left untreated. Peanuts treated with chemicals other than Temik had thrips populations similar to untreated plants. Significantly lower yields were revealed between peanuts treated with Temik and those treated with Mustang-Max (both rates) or plants left untreated. In addition, peanuts treated with Orthene (post-applied) yielded significantly less than untreated peanuts, but did not differ from the low yields obtained in peanuts treated with Temik.

While these results are not typical of the performance experienced with each of these chemistries for thrips control, they do point to the inconsistent nature of thrips damage and its effects on peanut yield. In previous years, with similar studies, results completely the opposite of those obtained in 2003 were obtained with no decisive reason for the inconsistencies seen. The one recurring theme from many of these studies is that low to moderate levels (0-50 thrips per 5 leaves) of stress from thrips damage has resulted in a relatively consistent yield increase. This scenario might change appreciably if tomato spotted wilt ever became a viable threat to Oklahoma; however, up to now, the threat from this thrips vectored disease has seen little to no impact on the state.

Table 1. Effect of insecticides on thrips populations in terminal leaves and yield – Perkins Research Station, Perkins, OK, 2003.

Treatment (Rate – lb a.i./A)	Mean Total Thrips/5 Leaves*				
	3DAT	7DAT	14DAT	21DAT	Yield
Temik (1.0)	4.5 c	6.3 b	5.0 abc	2.3 a	1815.0 c
Orthene IF (0.66)	27.8 ab	22.0 a	8.5 a	5.3 a	2620.9 ab
Mustang-Max (0.010)	37.5 a	23.3 a	5.5 abc	3.5 a	2526.5 ab
Mustang-Max (0.012)	23.8 abc	14.3 ab	3.8 bc	5.5 a	2686.4 ab
Orthene Post (0.5)	13.8 bc	18.3 ab	2.0 c	4.3 a	2301.4 bc
Untreated	35.3 ab	22.5 a	6.8 ab	3.3 a	2848.3 a

* Means, within columns, followed by the same letter are not significantly different (ANOVA; LSD; P = 0.05).

Dr. Richard Grantham
Director, Plant Disease and Insect Diagnostic Laboratory

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