Suppression of the Two-Spotted Spider Mite on Peanuts[1]

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ABSTRACT

The two-spotted spider mite, **Tetranychus urticae** Koch, is a major pest of peanuts in North Carolina. Mite populations increase during hot, dry weather and are especially destructive in August and September. The potential losses to peanuts due to mites prompted an investigation of the miticidal and ovicidal properties of fungicides and insecticides currently registered for peanuts as well as the evaluation of chemicals not registered on peanuts for control of the two-spotted spider mite.

Plictran, Galecron, Trithion, Azodrin, Carzol, and Omite provided good suppression of the spider mite in field tests.

Laboratory studies, using a five second dip technique, indicated Plictran, Galecron, and Trithion had good ovicidal properties. The fungicides Du-Ter and Benlate exhibited a low level of ovicidal action. Du-Ter recommended for leaf spot control gave good control of mites in the laboratory tests and suppressed mite buildup in greenhouse experiments.

The two-spotted spider mite, *Tetranychus urticae* Koch, is a major pest of peanuts in North Carolina. Mite populations are especially destructive during hot, dry weather in August and September. Peanut plants damaged by mites in late August and September will not recover foliage prior to normal harvest.

Effective miticides for control of the two-spotted spider mite on a number of fruit, vegetable, and field crops have been reported. Good control of the two-spotted spider mite with Azodrin (monocrotophos) was reported by Powell and Landis (1966) and Hagel and Landis (1972). Fundal (chlordimeform), Kelthane (dicofol) and Supracide gave effective control of mites for 14 days on cotton (Furr and Laster, 1971). Plictran and Omite were reported by Rock and Yeargan (1970 and 1971) and Poe (1973) to give excellent suppression of the two-spotted spider mite on apples and strawberries, respectively.

Harries (1961) reported reductions in spider mite egg laying and increased mite mortality from antibiotics used experimentally in laboratory. Hunter (1966) found that the fungicide captan caused a slight reduction in the mite population.

The potential losses to peanuts due to spider mites prompted an investigation of the miticidal and ovicidal properties of some fungicides and insecticides currently registered for peanuts as well as the evaluation of chemicals not registered on peanuts for control of the two-spotted spider mite.

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Materials and Methods

□□□□□ — **Field Tests.** — **Experimental plots were established in peanut fields heavily infested with the two-spotted spider mite in Hertford County in 1963, Northampton County in 1971 and Halifax and Northampton Counties in 1972. Experiments were located in the most uniformly infested area of the field. Plots were 4 rows x 30 ft. and replicated 3 times.**

Insecticides were applied with a 4-row boom sprayer mounted on bicycle wheels and supplied with CO_2 cylinder for constant pressure. Sprays were applied at the rate of 25 gal/acre using 8002 T-Jet nozzles.

Insecticidal performance was determined by counting the number of living mites on 10 leaflets (1963) or 5 leaflets (1971 and 1972) at post-treatment intervals.

The following insecticides and miticides were used in field experiments: Acaraben (chlorobenzilate); Azodrin (monocrotophos); Carzol (m-[[(dimethylamino) methylene] amino] phenyl methylcarbamate monohydrochloride); ethion; Furadan (carbofuran); Galecron (chlordimeform); Kelthane (dicofol); malathion; methyl parathion; Omite (2 (p-tert-butylphenoxy) cyclohexyl 2-propynl sulfite); Plictran (triphenyltin hydroxide); Supracide (O, O - dimethyl phosphorodithioate, S-ester with 4- (mecaptomethyl) -2-methoxy- -1, 3, 4-thiadiazolin-5-one); Thimet (phorate); Trithion (carbophenothion).

Laboratory Tests. — Candidate chemicals were evaluated for miticidal and ovicidal action using a dip technique. This involved transferring adult mites from bean leaves and placing them on their dorsal side on double sticky tape on a 3 x 1 inch microscope slide. One microscope slide containing 20 adult female mites constituted one replicate. Each treatment was replicated three times.

Leaf pieces containing 50 mite eggs were attached to 3 x 1 inch microscope slides with double sticky tape. The leaf piece was carefully sealed to the slide to prevent buckling and drying of the leaf. Each treatment was replicated three times.

The following fungicides and insecticides were evaluated as miticides and ovicides in the laboratory: Azodrin; Benlate (benomyl); Bravo (chlorothalonil); Carzol; copper sulfur dust; diazinon; Dithane (zinc coordinated maneb); Du-Ter (triphenyltin hydroxide); Du-Ter Sulfur; Fungi-Sperse (liquid copper sulfur); Galecron; Lannate (methomyl); malathion; Plictran; Sevin + Copper sulfur; Stauffer R-28627 (S-tricyclohexyltin O, O-diisopropyl phosphorodithioate); Supracide; Trithion.

One quart of a calculated 25 gal/acre rate of spray was prepared for each chemical. A magnetic stirrer was used to mix the chemical and keep it in solution.

Microscope slides containing adult mites or eggs were dipped for 5 seconds in each chemical, allowed to drain until dry, then placed at room temperature in a microscope slide box for post treatment observation. A wad of moist cheese cloth was placed in the bottom of each slide box and moistened daily to maintain high humidity. Dusts were calculated for a 3 in ^{2} area and distributed by hand over the slide.

Mites used for this study were reared on Fordhook 242 lima beans. The colony was established from mites collected in a peanut field in late September, 1972.

Greenhouse Tests. — Florigiant peanuts grown in 6-inch pots were inundated with mites in Test 1. This was accomplished by spreading mite infested bean leaves uniformly over the peanut plants. When leaf damage (chlorosis) from mite feeding approached 10% of leaf area, plants were treated with candidate fungicides and miticides. Mite damage was recorded at one week and two weeks post treatment.

Greenhouse Tests 2 and 3 were infested with a known number of mites and mite eggs following two fungicidal applications. Fifty adult mites and 50 mite eggs were placed on each plant in Test 2. A third application of each candidate fungicide was applied following mite infestation. Mite suppression was based on the degree of leaf injury caused by the mites. Leaf injury was determined by a visual rating of 0% to 100% of total leaf area taken approximately three weeks following release of mites.

Twenty-five mites and 25 mite eggs were placed on each plant following the second fungicidal application in Test 3. Mite development and damage proceeded at such a slow rate that the peauts were treated with fungicides a third time and 5 days following treatment were reinfested with 50 mites and 50 mite eggs on each plant. Leaf damage ratings were obtained approximately three weeks following the second release of mites.

The following fungicides, miticides and insecticides were evaluated in the Greenhouse Tests: Benlate; Lannate; Bravo; Copper sulfur dust; diazinon; Dithane M-45; Du-Ter; Du-Ter Sulfur; Fungi-Sperse; Lannate; Sevin + copper sulfur dust; Plictran.

Eleven varieties of peanuts were evaluated in the greenhouse for resistance to the two-spotted spider mite. Peanuts were planted in 6-inch clay pots with four replicates for each variety. When plants were approximately eight weeks old, they were infested with 50 mites and 70 eggs (Test 1) or 50 mites and 50 eggs (Test 2). Varieties were scored for leaf damage approximately four weeks after infesting with mites using a 0% to 100% visual damage rating.

Results

□□□□□ Field Tests. — Trithion, ethion, and Kelthane were effective while malathion was relatively ineffective against the two-spotted spider mite (Table 1).

Table 1. Control of the two-spotted spider mite on peanuts, Hertford County, North Carolina. 1963.

Treatment[a]	Lb. AI/acre	Avg. No. living mites/10 leaves: pre-treatment	Two days post-treatment[b]
Trithion	1	284.3	0.3a
Ethion	1	158.7	1.0a
Kelthane	1	152.0	29.7a
Malathion	1	72.7	64.3a
Untreated	-	280.0	236.0a

a/ Applied August 28, 1963 at 25 gal/acre.

b/ Means followed by the same letter are not significantly different at the 5% level.

Tests conducted in 1971 showed that Azodrin, Omite, and Galecron gave the best suppression of mites. Azodrin applied at 0.5 lb. active/acre gave control equivalent to Galecron at 1 lb/acre or Omite at 2 lb/acre (Table 2). Ethion was the only insecticide tested that gave less than 80% reduction in mites.

Mites were reduced by 90% or more with Supracide, Galecron, Thimet granules, Carzol, Azodrin, Comite, Trithion and Plictran in the Halifax county test in 1972 (Table 3). Methyl parathion was ineffective against the two-spotted spider mite.

Tests conducted in Northampton county in 1972 confirmed the results obtained in the Halifax county tests. Galecron, Plictran, Carzol, Azodrin, Trithion, Thimet, and Supracide gave in excess of

Table 2. Control of the two-spotted spider mite on peanuts. Grant Farm. Northampton County, North Carolina. 1971.

Treatment[a]	Lb AI/acre	Avg. no mites/5 leaflets on August 19[b]	Avg. % control
Azodrin	1	3.7 a	99.1
Omite	2	11.0 a	97.4
Azodrin	.5	11.3 a	97.4
Galecron	1	18.3 a	95.6
Acaraben	1	30.7 ab	92.7
Omite	1	51.0 ab	87.8
Trithion	1	76.3 abc	81.7
Galecron	.5	105.7 abcd	74.7
Acaraben	.5	142.7 bcd	65.8
Ethion	1	187.7 cd	55.0
Trithion	.5	198.3 d	52.5
Untreated	-	417.3 e	--

a/ Applied August 11, 1971 at 25 gal/acre.

b/ Means followed by the same letter are not significantly different at the 5% level.

80% reduction of mites 8 days post treatment (Table 4.) Trithion, Plictran, and Galecron continued to adequately suppress the mite population fifteen days post treatment.

Laboratory Tests. — Tests of chemicals for mite ovicidal action revealed that Galecron, Stauffer R-28627, Plictran, and Trithion exhibited good ovicidal action (Table 5). Diazinon, Azodrin and Lannate did not exhibit ovicidal action.

Some fungicides recommended for *Cercospora* leafspot control on peanuts were tested as mite ovicides in the laboratory using Plictran as a miticide standard. Du-Ter and Benlate exhibited low ovicidal action compared to Plictran while other fungicides showed no ovicidal properties (Table 6).

Table 3. Control of the two-spotted spider mite on peanuts. Harlow Farm. Halifax County, N. C. 1972.

Treatment[a]	Lb. AI/acre	Avg. no. mites/5 leaflets[c]	Avg. % control[c]
Supracide	.5	0 a	100
Galecron	1	0.3 a	99.7
Thimet 10G	1	1.0 a	99.1
Supracide	1	1.3 a	98.8
Carzol	.5	2.7 a	97.6
Azodrin	.5	5.7 a	94.9
Comite	2	5.7 a	94.9
Comite	1	7.0 a	93.8
Trithion	1	7.7 a	93.1
Plictran	1	11.7 a	89.6
Trithion	.5	17.3 a	85.9
AC 92100 10G	1	27.3 a	75.7
Plictran	.5	32.0 a	71.5
Methyl Parathion	.5	79.0 b	29.6
Untreated	-	112.3 b	-
		Test 2	
Thimet 10G[b]	1	4.3 a	95.6
Untreated[b]	-	96.7 b	-

a/ Applied August 17, 1972

b/ Applied August 23 and evaluated August 31.

c/ Four days post treatment. Means followed by the same letter are not significantly different at the 5% level.

Spadafora and Lindquist (1972) reported benomyl (Benlate) exhibited ovicidal action by reducing egg hatch of the two-spotted spider mite by approximately 33%.

Table 4. Control of the two-spotted spider mite on peanuts. Marshall Grant farm. Northampton County, N. C. 1972.

Treatment[a/]	Lb. AI acre	Avg. No. mites on 5 leaflets[b/]	Avg. % control[b/]	Avg. No. mites on 5 leaflets[c/]	Avg. % control[c/]
Galecron	1	2.3 a	99.3	2.7	87.0
Plictran	1	15.3 ab	95.0	1.0	95.2
Carzol	.5	19.3 ab	93.9	18.7	9.7
Azodrin	.5	23.7 ab	92.4	10.3	50.2
Trithion	1	34.3 ab	89.0	0.3	98.6
Thimet 10G	1	50.7 abc	83.7	12.3	40.6
Supracide	.5	53.7 abc	82.9	14.7	29.0
Supracide	.25	122.7 bc	60.5	23.7	0
Thimet 10G	.5	156.3 c	49.7	19.3	6.8
Untreated	-	310.3 d	-	20.7	—

a/ Applied August 23.
b/ 8 days post treatment.
c/ 15 days post treatment.
Means followed by the same letter are not significantly different at the 5% level.

Table 5. Ovicidal action of insecticides and miticide on eggs of the two-spotted spider mte. Laboratory Test. 1973.

Treatment[a/]	Lb. Active/ acre	Avg. No. eggs hatched/50 eggs[b/] Test 1	Test 2	Test 3	Test Average[c/]
Galecron	1	0.3	0	0	0.1 a
Plictran	1	2.3	0	0	0.8 a
Trithion	1	4.3	3.7	5.0	4.3 ab
Supracide	1	20.0	2.3	5.0	9.1 b
Carzol	.5	9.0	10.3	16.7	12.0 b
Diazinon	1	39.3	26.0	14.7	26.7 c
Azodrin	.5	36.3	27.7	31.3	31.8 c
Untreated	-	43.7	48.0	39.7	43.8 d
Lannate	.5	44.7	45.7	44.3	44.9 d
Lannate	1	43.7	44.3	42.7	43.6 d
Untreated	-	48.0	44.7	40.3	44.3 d
Stauffer R-28627	1	0.3	-	-	0.3 a
Untreated	-	44.7	-	-	44.7 d

a/ Dip test-5 seconds exposure
b/ Three replicates of 50 mite eggs/replicate each test.
c/ Means followed by the same letter are not significantly different at the 5% level

Table 6. Ovicidal action of fungicides and miticide on eggs of the two-spotted spider mite. Laboratory Test. 1973.

Treatment[a/]	Formulation lb/acre	No. mite eggs hatched/50 eggs[c/] Test 1	Test 2	Test 3	Total	Average[d/]
Plictran[b/]	2	3.3	0	0	3.3	1.1 a
Du-Ter Sevin	1/2	38.7	34.0	28.3	101.0	33.7 b
Du-Ter	1/2	40.3	34.0	30.0	104.3	34.8 b
Benlate	1/2	42.0	36.3	32.0	110.3	36.8 b
Fungi-Sperse	2 gal	41.0	44.0	41.7	126.7	42.2 c
Dithane	1 1/2	46.7	48.3	32.7	127.7	42.6 c
Bravo	1 1/2	45.7	48.0	42.0	135.7	45.2 c
Copper Sulfur	25	47.0	48.0	41.7	136.7	45.6 c
Untreated	-	44.7	46.7	45.3	136.7	45.6 c

a/ Dip test - 5 seconds exposure.
b/ Miticide check
c/ Each test 3 replicates of 50 eggs/replicate.
d/ Means followed by the same letter are not significantly different at 5% level.

Table 7. Control of the two-spotted spider mite. Laboratory Test. 1973.

Treatment[a/]	Lb. AI/acre	Avg. no. living mites/20 mites 3days[b/]	4 days[b/]	Avg. no. eggs laid/20 mites 3 days[b/]
Plictran	1	0 a	0 a	0.7 a
Stauffer R-28627	1	0 a	0 a	0.7 a
Supracide	1	0 a	0 a	1.0 a
Galecron	1	0 a	0 a	4.7 b
Azodrin	.5	0.3 ab	0 a	0.3 a
Trithion	1	0.7 ab	0 a	0 a
Du-Ter	3 oz.	3.3 b	0.7 a	0.7 a
Malathion	1.25	6.3 c	0.7 a	2.7 ab
Lannate	1	3.0 a	1.3 a	0.7 a
Carzol	.5	8.7 c	7.7 b	2.7 ab
Untreated	—	15.7 d	14.3 c	11.0 c

a/ Dip test - 5 seconds exposure.
b/ Post treatment
Means followed by the same letter are not significantly different at 5% level.

Table 8. Control of spider mites with diazinon and Lannate. Laboratory Test. 1973.

Treatment[a/]	Lb. AI/acre	No. living mites/20 mites[b/] Test 1	Test 2	Test 3	Test Total	Average[c/]
Diazinon	.5	0.7	1.3	2.0	4.0	1.3 a
Diazinon	1	0	0.7	2.0	2.7	0.9 a
Untreated	-	14.7	14.3	17.0	46.0	15.3 b
Lannate	.5	1.3	1.3	3.0	5.6	1.9 a
Lannate	1	0.3	0.3	0.7	1.3	0.4 a
Untreated	—	11.0	9.0	11.7	31.7	10.6 b

a/ Dip test - 5 seconds exposure.
b/ 3 days post treatment
c/ Means followed by the same letter are not significantly different at 5% level.

Miticides, insecticides and a fungicide (Du-Ter) were compared in the laboratory for two-spotted mite control using a 5-second dip technique. In excess of 95% reduction in mites was obtained 3 days post treatment using Plictran, Stauffer R-28627, Supracide, Galecron, Azodrin and Trithion. Four days were required to obtain 95% control with Du-Ter and Malathion (Table 7). All treatments affected oviposition as indicated by the marked reduction in eggs deposited during three days post treatment.

Diazion and Lannate gave good suppression of adult mites in the laboratory (Table 8).

All fungicides labeled for leafspot control on peanuts gave some suppression of the two-spotted spider mite. Du-Ter, however, gave outstanding control and approached the performance of the miticide Plictran (Table 9). Bullock and Johnson (1968) reported triphenyltin hydroxide (Du-Ter) gave excellent control of the citrus rust mite *Phyllocoptruta* oleivora. Du - Ter was as effective against the citrus rust mite as chlorobenzilate (Acaraben).

The absence of field data on the miticidal properties of fungicides necessitated evaluating fungicides on mite-infested peanuts in the greenhouse. Plants were heavily infested with mites for maximum population pressure. When leaf area damage approached 10%, plants were treated with fungicides. Only Plictran held leaf damage caused by

Table 9. Summary of results of fungicide suppression of the two-spotted spider mite. Laboratory Test. 1973.

		No. living mites/20 mites[c/]					
Treatment[a/]	Formulation lb/acre	Test 1	Test 2	Test 3	Test 4	Test 5	Average[d/]
Plictran[b/]	2	0	0	0	0	0	0 a
Du-Ter	.5	0.3	0.7	0	0	0	0.2 a
Du-Ter Sulfur	.5	3.0	0.3	0	0.7	1.0	1.0 a
Fungi-Sperse	2 gal.	2.7	4.0	2.3	0.3	0	1.8 a
Copper Sulfur	25	6.0	0	1.0	1.3	1.3	1.9 a
Copper Sulfur-Sevin	25	3.0	0	2.0	2.3	0.7	1.6 a
Benlate	.5	11.0	2.0	4.3	3.0	3.7	4.8 b
Bravo	1.5	12.7	5.3	10.7	3.0	2.7	6.9 bc
Dithane	1.5	11.3	9.3	8.7	7.3	6.0	8.5 c
Untreated	-	12.7	11.3	14.7	13.3	13.0	13.0 d

a/ Dip test—5 seconds exposure

b/ Miticide standard

c/ Tests 1, 2, 3 and 5—96 hours post treatment; Test 4—72 hours post treatment

d/ Means followed by the same letter are not significantly different at the 5% level.

mites at the pre-treatment level. One week post treatment 73% leaf damage was recorded for the untreated check while damage on fungicide treated peanuts ranged from 23% to 45% (Table 10). Two weeks post treatment plants were scored 100% leaf damage except for Plictran treated peanuts. Plictran held leaf damage at the pre-treatment level two weeks post treatment.

Table 10. Effect of fungicides on suppression of the two-spotted spider mite. Greenhouse Test 1. 1972.

		% leaf damage	
Treatment	Formulation lb/acre	1 week[b/]	2 weeks[b/]
Plictram (50%)	2	10.0 a	10
Benlate (50%)	.5	23.3 ab	100
Fungi-Sperse (11 lb/gal)	2 gal.	26.7 ab	100
Copper Sulfur (4+75%)	25	28.3 ab	100
Du-Ter (47.5%)	.5	28.3 ab	100
Dithane M-45 (80%)	1.5	30.0 ab	100
Copper Sulfur-Sevin (4+75+5%)	25	35.0 ab	100
Bravo (75%0	1.5	45.0 b	100
Untreated	-	73.3 c	100

a/ Treated November 27, 1972 at 25 gal spray/acre.

b/ Post treatment.

Means followed by the same letter are not significantly different at the 5% level.

Information from mite development in the greenhouse suggests an initial infestation of 50 mites and eggs requires approximately three weeks to develop a damaging population. In the field, mite damage appears generally in late August. This means mites probably infest peanuts in late July or early August. At least two fungicidal applications would be applied in the field prior to projected mite infestation. An attempt was made to simulate expected field conditions in Greenhouse Tests 2 and3. Du-Ter and Du-Ter sulfur suppressed mite populations and leaf damage more than other fungicides evaluated and Du-Ter was only inferior to the miticide, Plictran (Table 11). Bravo, copper sulfur-Sevin, and Dithane did not suppress mite populations or leaf damage.

Results obtained in Greenhouse Test 3 coincided with the previous test. Mite suppression with Du-Ter approached the performance of the miticide Plictran (Table 12). Bravo, Fungi-Sperse, Diazinon, and Copper sulfur did not suppress mite damage.

Table 11. Effect of fungicides on two-spotted spider mite. Greenhouse Test 2. 1973.

Treatment[a/]	Formulation lb/acre	Avg. % leaf damage[b/]
Plictran	2	1.7 a
Du-Ter Sulfur (50+15%)	.5	8.3 abc
Du-Ter	.5	18.3 abc
Benlate	.5	35.0 bcde
Fungi- Sperse	2 gal.	41.7 cdef
Copper Sulfur	25	45.0 cdef
Dithane M-45	1.5	58.3 def
Copper Sulfur-Sevin	25	61.7 def
Bravo	1.5	70.0 f
Untreated	-	68.3 f

a/ Three applications. Each plant infested with 50 mites + 50 mite eggs after 2nd application.

b/ Leaf damage two weeks after third application.

Means followed by the same letter are not significantly different at 5% level.

Table 12. Effect of fungicides on suppression of the two-spotted spider mite. Greenhouse Test 3.

Treatment[a/]	Formulation lb/acre	Avg. % leaf damage April 30[b/]
Plictran	2	0 a
Du-Ter	.5	4.3 ab
Du-Ter Sulfur	.5	16.7 abc
Benlate	.5	26.7 abcd
Lannate (90%)	1.1	28.3 abcd
Benlate + Lannate	.25 + .25	30.0 bcd
Bravo	1.5	41.7 cd
Diazinon (4 lb/gal)	1 qt.	50.0 d
Copper Sulfur	25	50.0 d
Fungi-Sperse	2 gal	55.0 d
Untreated	-	45.0 cd

a/ Treated March 8, March 19, and April 6, 1973. Infested with mites March 21 and April 11, 1973

b/ Means followed by the same letter are not significantly different at 5% level.

Table 13. Resistance of peanut varieties to the two-spotted spider mite. Greenhouse Test. 1972 and 1973.

	Avg. % leaf damage[a/]		
Peanut variety	Test 1[b/] Dec. 28	Test 2[c/] May 13	Avg. Damage
Va 72 R	32.5 a	15.0	23.8
NC - Fla 14	33.8 a	21.3 ab	27.6
NC 17	35.0 a	22.5 ab	28.8
Florunner	70.0 de	33.8 bc	56.9
NC 4	38.8 a	38.8 cd	38.8
Florigiant	52.5 bc	41.3 cd	46.9
Goldens X-30 L-25	46.3 ab	41.3 cd	43.8
Shulamith	65.0 cd	42.5 cd	53.8
Avoca 11	57.5 bcd	47.5 d	52.5
NC 5	70.0 de	61.3 e	65.7
NC 2	86.3 e	67.5 e	76.9

a/ Four replicates each test.

b/ Infested Dec. 3, 1972 with 50 mites and 70 mite eggs/plant.

c/ Infested Apr. 17, 1973 with 50 mites and 50 mite eggs/plant

Means followed by the same letter are not significantly different at the 5% level.

Eleven varieties of peanuts representing some common commercial varieties were evaluated for relative susceptibility to the two-spotted spider mite. An average range in susceptibility from 23.8% to 76.9% was obtained. Va 72 R, NC-Fla 14 and NC 17 exhibited the lowest leaf damage caused by mites in both tests and NC 2 was the most susceptible variety to mites.

Discussion

□□□□□ — Field tests indicate that good initial control of the two-spotted spider mite is possible with Acaraben, Azodrin, Carzol, Galecron, Plictran, Omite, and Trithion. Residual control was evident with Galecron, Plictran, and Trithion. This indicates these chemicals have ovicidal properties. Laboratory results did, in fact, indicate they were ovicidal. Miticides lacking ovicidal properties such as Azodrin may be most effective by applying a second application 5 to 8 days after the first application. The timing of the second application will permit all eggs to hatch but will not permit sufficient time for adults to oviposit. Cagle (1949) in his study of the life history of the two-spotted spider mite reported 3 days were required for egg incubation at 75°F and 5 days were required from hatching to adult at 75°F.

Fungicides such as Du-Ter and Benlate with ovicidal properties and Du-Ter with miticidal properties may be used to suppress mite buildup in mite problem areas. If the mite infestation results from a source adjacent to the peanut field, it is unlikely that the fungicide Du-Ter will continue to give adequate suppression. If the infestation does not result from a constant local source Du-Ter may prove adequate without a miticide.

Evidence of differences in peanut varietal susceptibility to the two-spotted spider mite indicates a potential means of mite suppression in future research.

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