

Comparison of Nematicides for Management of *Meloidogyne arenaria* on Tobacco



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Sample submitted to UGA-Athens ..
Confirmed to be *Meloidogyne*
arenaria



ROTATIONS

tobacco

cotton

peanut

vegetables

corn

soybeans

small grains

TOBACCO

Resistance to *M. incognita*
(Southern root knot nematode)

NO Resistance to *M. arenaria*
(Peanut root knot nematode)

1,3-D Telone Supply , cost

Temik

Not available

Objectives

Evaluate nematicide
candidates on tobacco

Plot area infested with *M. arenaria*

History of several peanut
crops and tobacco

RANDOMIZED COMPLETE BLOCK

6 REPLICATIONS

SINGLE ROW 35 FT LONG

CULTIVAR K-394

Treatment List

<u>Treatment</u>	<u>Rate and Application Timing</u>
1. Non-treated Control	N/A
2. Telone II	6 gal/A PPI
3. Devgen	2 qt/A PPI 2 qt/A PPI 2 qt/A PPI
4. Temik	20 lb/A PPI
5. MANA	3.31 lb PPI
6. Vapam	37.5 gal/A PPI
7. Nem-EXP	$\frac{3}{4}$ lb a.i. /A PPI $\frac{3}{4}$ lb a.i. /A 3 wks PP
8. Nem-Exp	$\frac{3}{4}$ lb a.i. /A PPI







Plant Vigor

Treatment	Rate Application Schedule	Average Vigor (0-10 Scale)
1. Non-treated	N/A	7.9 d
2. Telone II	6 gal/A PPI	9.7 a
3. Devgen	2 qt/A PPI 2 qt/A PP 2 qt/A PP	8.7 c
4. Temik	20 lb/A PPI	9.1 b
5. MANA	3.31 lb/A PPI	9.4 ab
6. VAPAM	37.5 gal/A PPI	9.5 ab
7. NEM-EXP	$\frac{3}{4}$ lb a.i./A PPI $\frac{3}{4}$ lb a.i./A 3 wk PP	9.6 a
8. NEM-EXP	$\frac{3}{4}$ lb a.i./A PPI	9.4 ab

PLANT HEIGHT

Treatment	Rate Application Schedule	Height Measurements
1. Non-treated	N/A	35.9 a
2. Telone II	6 gal/A PPI	35.9 a
3. Devgen	2 qt/A PPI 2 qt/A PP 2 qt/A PP	35.2 a
4. Temik	20 lb/A PPI	36.1 a
5. MANA	3.31 lb/A PPI	33.0 a
6. VAPAM	37.5 gal/A PPI	37.4 a
7. NEM-EXP	¾ lb a.i./A PPI ¾ lb a.i./A 3 wk PP	34.9 a
8. NEM-EXP	¾ lb a.i./A PPI	32.9 a

Nematode populations

Treatment	Rate/Application Schedule	Number of <i>Melodogyne sp.</i> per 200 cc soil	
		Pre-Plant	At Final Harvest
1. Non-treated	N/A	88.3 a	288.3 a
2. Telone II	6 gal/A	5.0 d	98.3 ab
3. Devgen	2 qt PPI 2 qt PP 2 qt PP	56.6 b	118.3 ab
4. Temik	20 lb/A PPI	25.0 ed	176.7 ab
5. MANA	3.31 lb/A PPI	33.3 bc	158.3 ab
6. VAPAM	37.5 gal/A PPI	10.0 cd	15.0 b
7. NEM-EX	$\frac{3}{4}$ lb a.i./A PPI + $\frac{3}{4}$ lb a.i./A 3 wks PP	36.6 bc	15.0 b
8. NEM-EX	$\frac{3}{4}$ lb a.i./A PPI	36.6 bc	83.3 ab





NEMATODE ROOT GALL RATINGS AND NUMBER PLANT PARASITIC NEMATODES

Treatment	Rate/Application Schedule	Root Gall Ratings (Zecks Scale 0-10)	
		Mid Seadon	At Final Harvest
1. Non-treated	N/A	3.1 ab	6.7 a
2. Telone II	6 gal/A	0.3 d	1.7 c
3. Devgen	2 qt PPI 2 qt PP 2 qt PP	4.0 a	7.7 a
4. Temik	20 lb/A PPI	1.6 cd	4.1 b
5. MANA	3.31 lb/A PPI	2.8 ab	6.5 a
6. VAPAM	37.5 gal/A PPI	1.0 d	1.1 c
7. NEM-EX	$\frac{3}{4}$ lb a.i./A PPI + $\frac{3}{4}$ lb a.i./A 3 wks PP	2.2 bc	6.25 a
8. NEM-EX	$\frac{3}{4}$ lb a.i./A PPI	3.3 ab	6.7 a

PLANT YIELD

Treatment	Rate Application Schedule	Dry Weight Yield (pounds per acre)
1. Non-treated	N/A	1634.1 bc
2. Telone II	6 gal/A PPI	2641.0 a
3. Devgen	2 qt/A PPI 2 qt/A PP 2 qt/A PP	1350.0 c
4. Temik	20 lb/A PPI	1995.6 b
5. MANA	3.31 lb/A PPI	1953.5 b
6. VAPAM	37.5 gal/A PPI	2859.5 a
7. NEM-EXP	$\frac{3}{4}$ lb a.i./A PPI $\frac{3}{4}$ lb a.i./A 3 wk PP	1873.3 b
8. NEM-EXP	$\frac{3}{4}$ lb a.i./A PPI	1669.8 bc

Conclusion

Peanut root knot capable of causing
serious losses on tobacco

Conclusion

Fumigants provided best
control of nematodes

Conclusion

New contacts show
promise for tobacco
nematode management

Conclusion

No phyto noted on
contacts , rates may not be
high enough

A vintage, rusted brown Dodge truck is parked in a wooded area. The truck is the central focus, showing signs of age and wear. The background consists of bare trees, suggesting a late autumn or winter setting. The lighting is somewhat dim, creating a moody atmosphere.

Thank You
GA Tobacco Commission
Philip Morris International



Thank You

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Philip Morris International



PLANT HEIGHT AND YIELD

Treatment	Rate Application Schedule	Height Measurements (centimeters)	Dry Weight Yield (pounds per acre)
1. Non-treated	N/A	35.9 a	1634.1 bc
2. Telone II	6 gal/A PPI	35.9 a	2641.0 a
3. Devgen	2 qt/A PPI 2 qt/A PP 2 qt/A PP	35.2 a	1350.0 c
4. Temik	20 lb/A PPI	36.1 a	1995.6 b
5. MANA	3.31 lb/A PPI	33.0 a	1953.5 b
6. VAPAM	37.5 gal/A PPI	37.4 a	2859.5 a
7. NEM-EXP	$\frac{3}{4}$ lb a.i./A PPI $\frac{3}{4}$ lb a.i./A 3 wk PP	34.9 a	1873.3 b
8. NEM-EXP	$\frac{3}{4}$ lb a.i./A PPI	32.9 a	1669.8 bc