

SWEETPOTATO (*Ipomoea batatas* 'Covington')
 Southern Root Knot Nematode; *Meloidogyne incognita*
 Root Knot Nematode; *Meloidogyne enterolobii*

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Evaluation of nematicides for control of root knot nematodes in sweetpotato, 2017.

This experiment was conducted on a commercial sweetpotato farm near Kenly, NC. The trial site is known to be infested with both *Meloidogyne incognita* and *Meloidogyne enterolobii* nematodes. Covington sweetpotatoes were transplanted on 6 Jun and spaced at 1 plant per foot in row. The plots were 20-feet long, and the spacing between rows was 46 inches. The field was planted in soybean the previous year. Treatments were randomized in a random complete block design with four replications per treatment. Fumigant treatments were applied on 10 May, 3 weeks prior to transplanting. Pre-plant Nimitz and DiTera sprays were applied on 31 May and incorporated into the soil. Drench treatments were applied immediately following transplanting to the base of each plant. Sprays were applied on 6 Jun immediately prior to transplanting. Layby sprays were applied at first cultivation and incorporated into the soil. Fumigant applications were applied with a chisel plow at specific rates. Spray applications were applied with a CO₂ powered backpack sprayer at 40 gal/A. Drench applications were applied by pouring 75 mL of nematicide mixture at the base of each plant. Sweetpotatoes were harvested on 6 Oct. The middle 10-feet of each plot were harvested to avoid carryover of treatments from one plot to the next. After harvest, roots were weighed, washed, sorted by size, counted, and rated for nematode damage. Only U.S. No. 1 (3-9 in.) sized sweetpotatoes were rated for nematode damage. Gall ratings were used to determine whether sweetpotatoes were marketable or unmarketable. Data were analyzed in the software SAS (SAS Institute, Cary, NC) using Proc GLIMMIX and LSmeans (pdiff.) to separate means.

No phytotoxicity was observed in any treatment. Q8U80 at 61.4 fl oz/A, Velum Prime applied as a drench, Velum Prime applied as a spray at planting + Telone II at 6 gal/A, Telone II at 9 gal/A, and Q8U80 at 30.7 fl oz/A all provided significantly more control when compared to the untreated control plots. Chloropicrin was the only treatment to provide a significant increase of U.S No. 1's by weight compared to the untreated control plots. In the table, treatments are sorted by % Nematode Damage.

Treatment	Application Type	% Nematode Damage*	Yield: lbs. US No. 1 grade
Q8U80 - 61.4 fl oz/A	Drench	30.78 a**	11.15 b
Velum Prime - 6.5 fl oz/A	Drench	32.03 ab	9.8 b
Velum Prime - 6.5 fl oz/A	At plant spray		
Telone II - 6 gal/A	Fumigant	43.11 ab	13.95 b
Telone II - 9 gal/A	Fumigant	48.31 abc	14.75 b
Q8U80 - 30.7 fl oz/A	Drench	48.45 abcd	16.85 ab
Vydate - 4 qt/A	Drench	51.09 abcde	17.35 ab
Chloropicrin - 3 gal/A	Fumigant	55.55 abcdef	24.6 a
Nimitz - 1.3 pt/A	At plant spray	62.41 bcdefg	11.7 b
Telone II - 5 gal/A	Fumigant		
Chloropicrin - 2.5 gal/A	Fumigant	68.27 cdefgh	13.85 b
Telone II - 6 gal/A	Fumigant	70.90 cdefgh	15.5 ab
Nimitz - 1.3 pt/A	Pre-plant spray	76.21 defgh	11.2 b
Untreated	N/A	80.70 efgh	10.50 b
Telone II - 6 gal/A	Fumigant		
Chloropicrin - 3 gal/A	Fumigant	82.93 fgh	13.55 b
Aveo EZ - 5.2 fl oz/A	At plant spray	83.35 fgh	15.00 ab
DiTera - 5lb/A	Pre-plant spray		
DiTera - 5 lb/A	Drench		
DiTera - 5 lb/A	Spray at cultivation	89.47 gh	13.35 b
Aveo EZ - 5.2 fl oz/A	Drench	94.95 h	16.00 ab
Velum Prime - 6.5 fl oz/A	At plant spray		
Velum Prime - 6.5 fl oz/A	Spray at cultivation	98.08 h	8.15 b

*% nematode damage was calculated for each treatment based on percentage of roots with nematode damage

** Treatments followed by the same letter(s) within a column are not statistically different (LSmeans (Pdiff) p=.05)