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# Nematode Management

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All crops grown in Louisiana are subject to some type of nematode attack. Some nematodes are very damaging, such as root-knot, reniform, and cyst nematodes. Other nematodes cause only minor root damage, such as stunt, spiral, and stubby-root nematodes. Different crops, and even varieties within a crop, may differ in their response to each nematode species. Chemical control should be used if a nematode population appears to be at damaging levels and is likely to cause significant yield loss.

### Notes for all tables in this chapter:

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor is endorsement of a particular product by LSU or the LSU AgCenter implied.

<sup>2</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated.

## Managing nematodes in field crops.

### Cotton

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Telone II	3-6 gal	Apply fumigant 1 week before planting at a depth of 14 inches beneath the soil surface. Soil should not be excessively wet at the time of application.
AgLogic 15G	3.5-7 lb	Apply granules in seed furrow and cover with soil.
Vydate C-LV	17 fl oz (foliar)	Apply at 1-7 true leaf stage and a second application 14 days later. Use after initial treatment with a nematicide. For reniform, root-knot, and lance nematodes.
Acceleron INT-710	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Duo COT202	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Duo Cotton	Seed application	Use in fields with low to moderate nematode levels only.
Poncho Votivo	Seed application	Use in fields with low to moderate nematode levels only.
AERIS Seed Applied System	Seed application	Use in fields with low to moderate nematode levels only.
Majestene	7.2-19.6 fl oz / 1,000 ft row	In-furrow spray on or below seed.
Velum	5.0-6.8 fl oz	In-furrow spray on or below seed. Do not apply more than 13.7 fl oz per year.
Averland FC	3.5 fl oz	In-furrow spray on or below seed. Do not apply more than 7.0 fl oz per year.

### Corn

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	10-13 lb (40-in rows)	Apply in a 12-15-inch band at planting. Incorporate into top 2-4 inches of soil.
Counter 15G Lock 'n Load	6-8 oz / 1,000 ft row	Apply in a 7-inch band.
Counter 20G Lock 'n Load	4.5-6 oz / 1,000 ft row	Apply in a 4-5 inch band over open seed furrow in front of press wheel or apply in-furrow.
Counter 20G Smartbox	4.5-6 oz / 1,000 ft row	Apply in a 4-5 inch band over open seed furrow in front of press wheel or apply in-furrow.
Avicta Complete Corn 250	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Complete Corn 500	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Duo Corn	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Duo 250 Corn	Seed application	Use in fields with low to moderate nematode levels only.
Poncho Votivo	Seed application	Use in fields with low to moderate nematode levels only.
Telone II	3-6 gal	Apply soil fumigant 1 week before planting at a depth of 14 inches beneath the soil surface. Soil should not be excessively wet at the time of application.
Averland FC	4-6 fl oz	Apply in-furrow. Do not apply more than 6 fl oz per year.

## Grain Sorghum

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Counter 15G Lock 'n Load	7 oz / 1,000 ft row	Apply in a 5-7 inch band behind planter shoe in front of press wheel and lightly incorporate with chains or tines.
Counter 20G Lock 'n Load	5.2 oz / 1,000 ft row	Apply in a 5-7 inch band behind planter shoe in front of press wheel and lightly incorporate with chains or tines.
Counter 20G Smartbox	5.2 oz / 1,000 ft row	Apply in a 5-7 inch band behind planter shoe in front of press wheel and lightly incorporate with chains or tines.
Poncho Votivo	Seed application	Use in fields with low to moderate nematode levels only.

## Peanut

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate C-LV	34-68 fl oz (soil)	Apply in a 7-inch band and incorporate.
Vydate C-LV	17 fl oz (foliar)	Apply 28 days after planting and again after an additional 14 days.
Velum	6.84 fl oz	In-furrow spray on or below seed. Do not apply more than 13.7 fl oz per year.

## Soybean

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Poncho Votivo	Seed application	Use in fields with low to moderate nematode levels only.
ILeVO	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Complete Beans 500	Seed application	Use in fields with low to moderate nematode levels only.
Majestene	7.3-19.6 fl oz / 1,000 ft row	Apply at planting in-furrow or in a T-band.
Velum	3-6 fl oz	Apply at planting in-furrow.
Telone II	3-6 gal	Apply pre-plant under the row. Reserve for heavy nematode pressure.

## Sugarcane

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	1.8-3.6 lb / 1,000 ft row	Apply in a 12-15 inch band over seed pieces and cover with soil.
Nimitz	3.5-7 pints	Apply broadcast or banded at-planting or at ratoon.

## Sweet Potato

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	1.6-2.1 lb / 1,000 ft row	Apply in a 12-15 inch band.
Mocap EC	5.1-6.9 oz / 1,000 ft row	Apply in a 12-15 inch band.
Nimitz	3.5-7 pints	Application can be made at planting or pre-plant. Apply in a moist, well-prepared bed. <b>EU export restrictions apply.</b>
AgLogic 15G	10-20 lb	Apply in a 12-inch band over open furrow or soil surface and cover immediately during bed forming.
Vydate L	2 gal	Apply within a week of planting and incorporate 4-6 inches.
Velum	6.84 fl oz	Apply as an in-furrow spray using ground equipment.
Telone II	6-8 gal	Apply pre-plant beneath the row, 7-10 days prior to planting.
Vapam HL	See manufacturer's label	Must be applied 3 weeks prior to planting.
K-Pam HL	See manufacturer's label	Must be applied 3 weeks prior to planting.
Salibro	15.4-61.4 fl oz	Apply broadcast and incorporate into soil, or apply as an in-furrow spray. <b>EU export restrictions apply.</b>

## Managing nematodes in fruit trees and small fruit crops.

### Blackberry, Boysenberry, Dewberry, Raspberry, Strawberry

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Telone II	27-35 gal (broadcast)	Apply 14 days prior to planting. Use 2 chisels spaced 12 inches apart per row. Inject to a depth of 10 inches.
Telone C-17	32.4-42 gal (broadcast)	Apply 14 days prior to planting. Use 2 chisels spaced 12 inches apart per row. Inject to a depth of 10 inches.
Telone C-35	39-50 gal (broadcast)	Apply 14 days prior to planting. Use 2 chisels spaced 12 inches apart per row. Inject to a depth of 10 inches.
Telone EC	9-24 gal (broadcast)	Apply by drip irrigation equipment. Soil should be moist 9 inches beneath the surface.
DiTera DF	13-100 lb (broadcast)	Incorporate by mechanical means, irrigation, or rainfall.

### Strawberry (specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Telone C-17	32.4-37 gal	Waiting period of 1 week for every 10 gal applied.
Telone C-35	39-45 gal	Waiting period of 1 week for every 10 gal applied.
Paladin	35-51.3 gal	Follow label and observe temperature dependent waiting interval before planting (21-42 days).
Velum	6.0-6.5 fl oz	Apply through low-pressure drip. Do not apply more than 13.7 fl oz per year.
Nimitz	3.5-7 pt	Apply 7 days prior to transplanting.

### Fruit Tree Sites (preplant)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vapam HL	50-75 gal	Apply by chemigation and observe waiting period.
K-Pam HL	30-62 gal	Apply by chemigation and observe waiting period.
Telone II	27-35 gal	Waiting period of 1 week for every 10 gal applied.
Telone C-17	32.4-42 gal	Waiting period of 1 week for every 10 gal applied.
Telone C-35	39-50 gal	Waiting period of 1 week for every 10 gal applied.

### Citrus

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Velum	6.84 fl oz	Apply by chemigation through low-pressure drip.
DiTera DF	13-100 lb (broadcast)	Incorporate by mechanical means, irrigation, or rainfall.
Movento	8-10 fl oz (foliar)	Do not apply during bloom phase.
Vydate L	2 gal	Apply in 20 gal of water and incorporate to a depth of 4-8 inches. <b>Use on nonbearing trees only.</b>

### Apple, Peach, Nectarine

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate L	2 gal	Apply in 20 gal of water and incorporate to a depth of 4-8 inches. <b>Use on nonbearing trees only.</b>
DiTera DF	13-100 lb (broadcast)	Incorporate by mechanical means, irrigation, or rainfall.

### Other Pome and Stone Fruits

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Velum	6.5-6.84 fl oz	Apply through low-pressure drip. Do not apply more than 13.7 fl oz per year.
Movento	6-9 fl oz (foliar)	Do not apply during bloom.
Nimitz	3.5-7 pints	Apply first application after flower buds start to swell and second application after harvest.

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## Managing nematodes in home gardens.

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Root-knot and reniform nematodes cause problems on many vegetables grown in the home garden. Cultural practices and resistant varieties can help reduce the amount of damage in the garden.

### Cultural Practices

1. Plant early before nematodes become active in soil.
2. Rotate crops in the garden.
3. Rotate the location of the garden each year.
4. Add organic matter to the soil in the form of green manures, compost, or mulches to stimulate natural enemies of nematodes and improve growing conditions within the soil for plants.
5. Use fallow plowing during parts of the summer to reduce nematode levels.
6. Keep the garden clean of weeds and grasses, which often serve as natural hosts for nematodes.
7. Keep soil fertility levels high and have the soil pH in the correct range for your soil type.
8. Provide extra water during prolonged dry periods.
9. Remove crops immediately after they are finished producing, especially the roots.
10. Most of the marigolds (except Signet types) are effective trap crops against root-knot nematodes. Plant the marigolds solid for at least two to three months and then plant vegetables.

### Resistant Varieties or Crops

- Root-knot nematode resistant varieties include:
  - **Tomatoes**
    - Vine types: Big Beef, Champion, Terrific, Better Boy, Mountain Fresh Plus.
    - Bush types: Celebrity, Crista, Fresh Plus, Sanibel.
    - Others: Muriel Roma, Small Fry.
  - **Southern Peas** - Mississippi Silver and Mississippi Purple.
- Reniform nematode-resistant crops include broccoli, cauliflower, corn, okra, onion, peanut, radish, and turnip. This also includes sweet potatoes Avoyelles, Bellevue, Bonita, Burgundy, Evangeline, Covington and Jewel.

## Managing nematodes in field and commercial ornamentals.

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Paladin	35-51.3 gal (broadcast)	Follow label and observe temperature dependent waiting interval before planting (21-42 days).
Dominus	10-40 gal	Waiting interval of 10-14 days before planting.
Telone II	42-55 gal	Wait at least 1 week for every 10 gal applied before planting.
Telone C-17	50-66 gal	Wait at least 1 week for every 10 gal applied before planting.
Telone C-35	60-79 gal	Wait at least 1 week for every 10 gal applied before planting.
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.
Vapam HL	37-75 gal	Tarping may be used to improve efficacy.
K-pam	30-62 gal	Tarping may be used to improve efficacy.
Pylon	5.2-10 fl oz / 100 gal (foliar)	For foliar nematodes. Make first application at first signs of damage and second at 7-14 days.
Basamid G	302-446 lb	Mechanically incorporate to a depth of 6 inches. Follow label and observe temperature dependent waiting interval before planting.
Mocap EC	2 qt (broadcast)	Incorporate 2-4 inches. Stock may be transplanted into the treated area after 72 hours. Pertains to field nursery stock only.

## Managing nematodes in turfgrass.

### Pre-plant

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Basamid G	302-446 lb	Mechanically incorporate to a depth of 6 inches. Follow label and observe temperature dependent waiting interval before planting.
Dominus	10-40 gal	Waiting interval of 10-14 days before planting.

### Post-plant

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Multiguard Protect	8 gal (initially)	After initial treatment, apply maintenance rates at 14- to 18-day intervals. Irrigate to a depth of 6 inches.
Multiguard Protect	5.5-8 gal (for maintenance)	Can be applied up to 6 times per year.
Indemnify	8.5-17 fl oz	Apply in 87-218 gallons of water per acre.
Nortica	30-100 lb	Apply every 3 months as necessary and irrigate to a depth of 4 inches.
Nortica 10 WP	35-50 lb	Apply every 3 months as necessary and irrigate to a depth of 4 inches.
Telone II	5-10 gal	Use on established turf for sod farms. <b>Not for golf greens.</b>
Divanem	3.13-6.25 fl oz	Apply at this rate on a 14-21-day interval.
Divanem	6.25-12.2 fl oz	Apply at this rate on a 21-28 day interval.
Quali-Pro Total	16-24 fl oz	Apply at this rate on a 14-21 day interval.
Quali-Pro Total	24-57 fl oz	Apply at this rate on a 21-28 day interval.

## Managing nematodes in vegetables crops.

### Beans (Snap, Lima)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	13-20 lb	Mechanically incorporate to a depth of 2-4 inches.

### Brassica Leafy Vegetables

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Velum	6.5-6.84 fl oz	Apply by chemigation through low-pressure drip. Do not apply more than 13.7 fl oz per year.
Movento	4-5 fl oz (foliar)	Apply when sufficient leaf surface is available. Do not apply more than 10 fl oz per year.
Nimitz	3.5-7 pt	Apply 30 days before planting as broadcast incorporated, banded and incorporated, or by chemigation. Do not apply more than once per crop and 7 pts per year.

### Cabbage (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.
Mocap EC	2.4 oz / 1,000 ft row	Apply in a 15-inch band. Mechanically incorporate to a depth of 2-4 inches. Do not use a seed furrow treatment or allow granules to contact the seed.
Mocap 15G	13 lb	Mechanically incorporate to a depth of 2-4 inches.

### Carrot (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate L	1-2 gal	Apply in-furrow using a minimum of 20 gal of water. Do not apply more than 2.5 gal per year.
Salibro	30.7-61.4 fl oz	Apply broadcast and incorporate.

### Cole Crops (Broccoli, Cabbage, Cauliflower)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.

### Cucumber (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	13 lb	Mechanically incorporate to a depth of 2-4 inches.

### Cucurbits (Cucumbers, Melons, Squash, Pumpkins, etc.)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Nimitz	3.5-5 pt	Apply 7-10 days before planting as broadcast incorporated, banded and incorporated, or by chemigation. Do not apply more than twice per crop and 7 pts per year.
Majestene	4-8 qt	Apply by soil drench or chemigation. Can be used prior to planting, at plant, or after planting.
Vydate L	1-2 gal (broadcast)	Incorporate 2-4 inches. Do not apply more than 3 gal per year.
Vydate L	2-4 pt (foliar)	Foliar spray 2-4 weeks after planting and 2-3 weeks after last application
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.
Paladin	35-51.3 gal (broadcast)	Follow label and observe temperature dependent waiting interval before planting (21-42 days).
Salibro	15.3-23 fl oz	Apply broadcast and incorporate, or through drip chemigation.

## Eggplant (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate L	1 gal (band) or 4 pt (foliar)	Apply in a band 2-3 weeks after transplanting and again 4 weeks later. Do not apply more than 3 gal per year.

## Fruiting Vegetables (Eggplant, Okra, Pepper, Tomato)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Movento	4-5 fl oz (foliar)	Apply when sufficient leaf surface is available. Do not apply more than 10 fl oz per year.
Velum	6.5-6.84 fl oz	Apply by chemigation through low-pressure drip. Do not apply more than 13.7 fl oz per year.
Majestene	4-8 qt	Apply by soil drench or chemigation. Can be used prior to planting, at plant, or after planting.
Nimitz	3.5-7 pt	Apply 7-10 days before planting as broadcast incorporated, banded and incorporated, or by chemigation. Do not apply more than once per crop and 7 pts per year.
Salibro	30.7-61.4	Apply broadcast and incorporate, or apply through drip chemigation.

## Irish Potato

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	40-80 lb	Apply uniformly and mechanically incorporate to a depth of 2-4 inches.
Mocap EC	1-2 gal (broadcast)	Apply uniformly and mechanically incorporate to a depth of 2-4 inches.
Movento	4-5 fl oz	Apply when sufficient leaf surface is available. Do not apply more than 10 fl oz per year.
Velum	6.5-6.84 fl oz	Apply with overhead chemigation. Do not apply more than 13.7 fl oz per year.
Vydate C-LV	34-68 fl oz	Apply in-furrow with a minimum of 20 gal of water.
Salibro	30.7-61.4 fl oz	Apply broadcast and incorporate.

## Leafy Vegetables

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Nimitz	3.5-7 pt	Apply 7-10 days before planting as broadcast incorporated, banded and incorporated, or by chemigation. Do not apply more than twice per crop and 7 pts per year.
Velum	6.5-6.84 fl oz	Apply with overhead chemigation. Do not apply more than 13.7 fl oz per year.
Movento	4-5 fl oz (foliar)	Apply when sufficient leaf surface is available. Do not apply more than 10 fl oz per year.
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.

## Pepper (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate L	2 pt (transplant water)	Add material to transplant water. Use a minimum of 200 gal of water. Do not apply more than 12 pt per year.
Vydate L	2 pt (drip chemigation)	Supplemental control after a labeled fumigant such as Telone, Vapam, or K-Pam. Do not apply more than 12 pt per year.
Paladin	35-51.3 gal (broadcast)	Follow label and observe temperature dependent waiting interval before planting (21-42 days).

## Sweet Corn

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Conter 20G Lock 'n Load	4.5-6 oz / 1,000 ft row	Apply in-furrow. Do not exceed 6.5 lb per year
Counter 20G Smartbox	4.5-6 oz / 1,000 ft row	Apply in-furrow. Do not exceed 6.5 lb per year
Mocap 15G	40 lb (broadcast)	Mechanically incorporate to a depth of 2-4 inches. Waiting interval of 3 days before planting.

## Tomato (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.
Vydate L	2-4 pt	Apply by chemigation every 1-2 weeks. Do not apply more than 12 pt per year.
Paladin	35-51.3 gal (broadcast)	Follow label and observe temperature dependent waiting interval before planting (21-42 days)

## Vegetables - General (Soil Fumigants)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Telone II	9-12 gal (broadcast)	Apply 2-3 weeks prior to planting.
Telone C-17	10.8-17.1 gal (broadcast)	Apply 2-3 weeks prior to planting.
Telone C-35	13-20.5 gal (broadcast)	Inject 12-14 inches beneath the row.
Telone EC	9-18 gal (broadcast)	Use with drip irrigation and reduce rate to match row width.
Vapam HL	37.5-75 gal	Inject and tarp.
K-Pam HL	30-60 gal	Inject and tarp.
Dominus	10-40 gal	Waiting interval of 10-14 days before planting.

The nematode section was revised October 2023 by T. Watson.