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# Plant Disease Control Notes

EXTENSION DIVISION

VIRGINIA POLYTECHNIC INSTITUTE

## NEMATODE CONTROL IN VEGETABLE GARDENS

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The easiest method of establishing a nematode control program in home gardens is to follow a system of crop rotation. This requires that three areas be set aside for garden use. Plant small grain for two years followed by one year of vegetable crops. Do not seed clover or other legumes in the small grain since legumes will increase root-knot nematode populations. Small grains will "starve out" most nematodes that affect vegetable crops.

If land is not available for crop rotation, then chemical soil fumigants may be used for nematode control using one of the following methods:

1. Broadcast (overall) treatment - When using this method all land is treated by injecting chemical to a 10" depth at 12" intervals in the soil. A simple gravity flow tank can be mounted on a cultivator to apply the chemicals. Immediately after chemical application, seal the soil surface with a heavy drag, or roller to prevent a rapid escape of the fumigant.

2. Row Treatment-Gravity Flow Equipment - Apply chemicals to a 10" depth through 2 chisels spaced 12" apart per row. Immediately list the row to seal furrows left by chisels. Chemicals may be applied from a simple gravity flow applicator mounted on the tractor or cultivator - lister frame

3. Row Treatment-Fruit Jar Method - Use a ten penny nail to punch two holes on opposite sides and close to the edge of a fruit jar lid to make a suitable applicator. Fill the jar with soil fumigant and recap the jar. Adjust your walking speed so you can put out the right amount of chemical in the number of feet of row. With a hoe make 2 furrows 10" deep and 12" apart per row. Now walk along the furrows dribbling the chemical in the bottom of the furrow. It may be advisable to test first with water to see how fast to walk. After applying chemical to every 100', list the row or rake over and cover the furrows to prevent a rapid escape of the fumigant.

Follow these simple steps when applying soil fumigants: (A) Work crop remains into soil so they are well decomposed before treatment. (B) Deep tillage to a depth of 12" or more is essential, break up all clods and loosen soil thoroughly. (C) At time of treatment the soil should be in good seedbed condition, with a temperature between 50°F. and 80°F. at the 5" level and with adequate moisture for seed germination. (D) Use a fertilizer containing at least 30% of the nitrogen in the nitrate form to avoid nitrogen deficiency. (E) Seal soil surface with a heavy drag or roller where broadcast application is used. For row treatment seal soil surface with a list or press wheel. (F) Consult container label for additional information.

Trade and brand names are used only for the purpose of information and the Virginia Cooperative Extension Service does not guarantee nor warrant the standard of the product, nor does it imply approval of the product to the exclusion of others which may also be suitable.

### KEYS TO PROPER USE OF PESTICIDES

1. Read the label on each pesticide container before each use. Follow instructions to the letter; heed all cautions and warnings, and note precautions about residues.
2. Keep pesticides in the containers in which you bought them. Put them where children or animals cannot get to them, preferably under lock and away from food, feed, seed, or other material that may become harmful if contaminated.
3. Dispose of empty containers in the manner specified on the label. If disposal instructions are not printed on the label, burn the containers where smoke will not be a hazard, or bury them at least 18" deep in a place where water supplies will not be contaminated.

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CHEMICALS RECOMMENDED FOR NEMATODE CONTROL IN  
HOME GARDEN VEGETABLES AND SMALL FRUIT

Crop	Nematicide	Application rate-gal/A (36" (over-row) all)		Residue tolerance (ppm)	Number of ft. one pt. per chisel (or furrow) will treat	Remarks
Vegetables* and small fruit (Pre-plant Application)	D-D	13.2	20	none established	272	<u>Apply chemical 14 days prior to transplanting. Row treatment:</u> Use 2 chisels (or furrows with the fruit jar method) spaced 12" apart per row. Apply chemical to a depth of 10". <u>Overall treatment:</u> Space chisels 12" apart and inject chemical 10" deep.
	Vidden-D	13.2	20	"	272	
	Telone	10.6	16	"	340	

\*Vegetable and small fruit crops on which DD, Vidden-D, or Telone may be used:

Beans, (green, snap, limas) beets, blackberries, blueberries, boysenberries, broccoli, brussels sprouts, cabbage, cantaloupe, carrots, cauliflower, celery, collards, cowpea, cucumber, dewberries, eggplant, endive, grapes, honeydew melon, kale, kolrabi, lettuce, loganberries, muskmelons, mustard greens, okra, onions, parsnips, peaches, peanuts, pears, peas, peppers, potatoes, pumpkins, quince, radish, raspberries, strawberries, squash, sweet potato, tomato, turnips, watermelons, winter squash.

Crop	Nematicide	Application rate-gal/A (36" (over-row) all)		Residue tolerance (ppm)	Number of ft. one pt. per chisel (or furrow) will treat	Remarks
Strawberries,**	Nemagon 12.1	1.32	2.0	10	2,720	<u>Preplant, time of planting, or postplant application.</u> For preplant use wait 7-14 days before planting. <u>Row treatment:</u> Use 2 chisels (or furrows with the fruit jar method) spaced 12" apart per row. Inject chemical to a depth of 10". <u>Overall Treatment:</u> Space chisels 12" apart and apply chemical 10" deep. Allow 55 days between treatment and harvest.
	OR					
Blackberries,	Nemagon 12.1	1.32	2.0	25	2,720	
	EC					
Boysenberries,	Fumazone 86	1.32	2.0	25	2,720	
	OR					
Dewberries,	Fumazone 86E	1.32	2.0	25	2,720	
Loganberries,				25		
Raspberries				25		

(Preplant, time of Planting and postplant application)

\*\*Allow 55 days between treatment and harvest.

\*\*Residue tolerance on strawberries treated with Nemagon or Fumazone is 10 ppm.

SEE YOUR DOCTOR IF SYMPTOMS OF ILLNESS OCCUR DURING OR AFTER USE OF PESTICIDES.