PRODUCT USER GUIDE

NIMITZ® 480 EC

A fast-acting contact nematicide, NIMITZ® 480 EC is a revolutionary new management option for controlling parasitic nematodes in fruiting vegetables and cucurbits.

ACTIVE INGREDIENT: Fluensulfone
CHEMISTRY GROUP: Unclassified

ADAMA

NEMATODES HAVE NOWHERE TO HIDE

NEMATICIDE

NIMITZ® 480 EC

A unique new tool for nematode management providing:

- Real nematode control through rapid contact action
- Simple, safe and effective application options at low rates
- Maximized crop potential and greater grower returns
- Minimal impact on beneficial and non-target species

Why choose NIMITZ® 480 EC?

- To achieve effective control of key nematode pests
- For the convenience of flexible application
- Because you want a product that is easy to handle
- For increased marketable yields and a sustainably managed cropping future

FEATURES AND BENEFITS

Features:

- Excellent control of key nematode pests in tomato (except small tomatoes), squash, eggplant, okra, cucumber, melons (canta, water, honey), peppers (bell and non-bell) and cantaloupe
- Applied using existing spray equipment
- Long-term control when used as part of a nematode management strategy
- Narrow activity spectrum and IPM compatible

Benefits:

- Maximized crop potential and greater grower returns
- Easy to use and no additional application equipment investment required
- Confidence that effective nematode control will be achieved now and into the future
- Highly effective against parasitic nematodes, but with minimal impact on non-target and beneficial species

HOW NIMITZ® 480 EC WORKS

Fluensulfone is a true nematicide that kills the target by contact, rather than temporary paralysis activity as seen with older organophosphate and carbamate chemistry.

NIMITZ® 480 EC has rapid activity. After 1 hour of exposure nematodes cease feeding, become paralyzed and complete mortality is achieved within 24 – 72 hours.

Any nematode eggs laid after exposure to NIMITZ 480 EC are likely to be unviable, or if juveniles do hatch, they do not survive.

In field trials, NIMITZ 480 EC consistently demonstrates equivalent or better nematode control when compared with the registered standard nematicide or fumigant and in many cases, the greater nematode control achieved by NIMITZ 480 EC results in a significant increase in marketable yield.

THE IMPACT OF PLANT PARASITIC NEMATODES

Plant parasitic nematodes are among the most destructive and problematic pests for growers around the world. These nearly invisible killers affect a variety of crops and are responsible for an estimated $125 billion in annual production losses globally.

Crops in serious danger include tomatoes, peppers, melons and other cucurbits, carrots, cereals, strawberries, potatoes, sugarcane, soybeans, leafy vegetables, sweet potatoes and many others.

Because these organisms are unseen, they can often appear to be less of a threat than they really are.

Nematodes typically do most of their work, and damage, invisibly beneath the soil. By interfering with the roots and reducing the plant's ability to extract water and nutrients, crop productivity is almost always affected.

In addition to the direct damage they cause to crops, even in low populations, nematodes enable easy penetration of other soil diseases to roots, creating more problems for the plant including affecting the external appearance of the harvested crops.

TARGET SPECIES

Root-knot Nematodes *(Meloidogyne spp)*

The root-knot nematode (RKN) group get their name from the characteristic formation of root galls on affected plants and are among the most damaging of plant-parasitic nematodes.

Adult female RKNs live inside the root gall where they feed, mature and lay eggs.

Root-knot nematode damage most often results in poor growth and reduced resistance to other problems such as moisture stress and disease. High levels of damage early in the crop can lead to total crop loss.

Symptoms most visibly obvious above the ground may include stunted plant growth, yellowing of the leaves and wilting on hot days as plants struggle to effectively draw moisture from the soil.

Root Lesion Nematodes *(Protylenchus spp)*

Root lesion nematodes infect a great variety of hosts. *Pratylenchus penetrans* alone has over 350 host plants. Signs of disease are similar in most plants and generally include necrotic lesions of the roots. The lesions can also be entrances for pathogenic bacteria and fungi, which produce secondary infections. Above ground, the plant becomes stunted, chlorotic and wilted, and it often dies. A crop field may be patchy as plants wither and die. Root lesion nematodes can cause significant yield losses.

HOW TO APPLY NIMITZ® 480 EC

NIMITZ® 480 EC can only be used prior to transplanting tomato (except small tomatoes), squash, eggplant, okra, cucumber, melons (canta, water, honey), peppers (bell and non-bell) and cantaloupe and should not be used prior to direct seeding these crops.

Timing

Application must be made to well prepared, bare, moist soil 7 days prior to the transplanting of seedlings with 2 true leaves into treated areas.

Use Rates

NIMITZ 480 EC is applied at a rate range of 2– 3 L/ac. The choice of use rate is dependent on the level of expected nematode numbers, cropping history, varietal susceptibility to nematodes and other factors. Use the highest rate of NIMITZ 480 EC when crops are most vulnerable and marketable yield is of high priority. The lower rate of NIMITZ 480 EC may be used for nematode population maintenance in conjunction with a range of other nematode management strategies.

Mixing, Loading and Handling Instructions

Add the recommended amount of NIMITZ 480 EC to the water in the spray tank and mix well. Continue agitation at frequent intervals during application. If NIMITZ 480 EC is to be mixed with other products or fertilizers, the physical compatibility of the mixture should be tested prior to use.

Broadcast Application

NIMITZ 480 EC may be applied using coarse droplets from conventional spray equipment and minimum of 300 litres of water per hectare to obtain uniform application. Once applied, mechanically incorporate to a depth of 15 – 20 cm to ensure even distribution. A light irrigation of 1.25 – 2.5 cm of water 1 – 5 days after may increase efficacy.

Field Sprayer Application

DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) Medium classification. Boom height must be 60 cm or less above the crop or ground.

Banded Application

The amount of product required for a banded application is dependent on the width of the planting bed. Calculate your rate to be applied based on percentage of the area to be treated.

Bed width (inches)	Linear Feet of Bed in 1 treated acre	MLs of NIMITZ 480 EC per 1,000 linear feet of row	
		1.62 L/ Treated Acre	3.24 L/ Treated Acre
12	43,560	36	56
18	29040	56	80
24	21780	74	110
30	17424	95	136
36	14250	115	166
48	10890	151	219
60	8712	186	272
72	7260	225	328

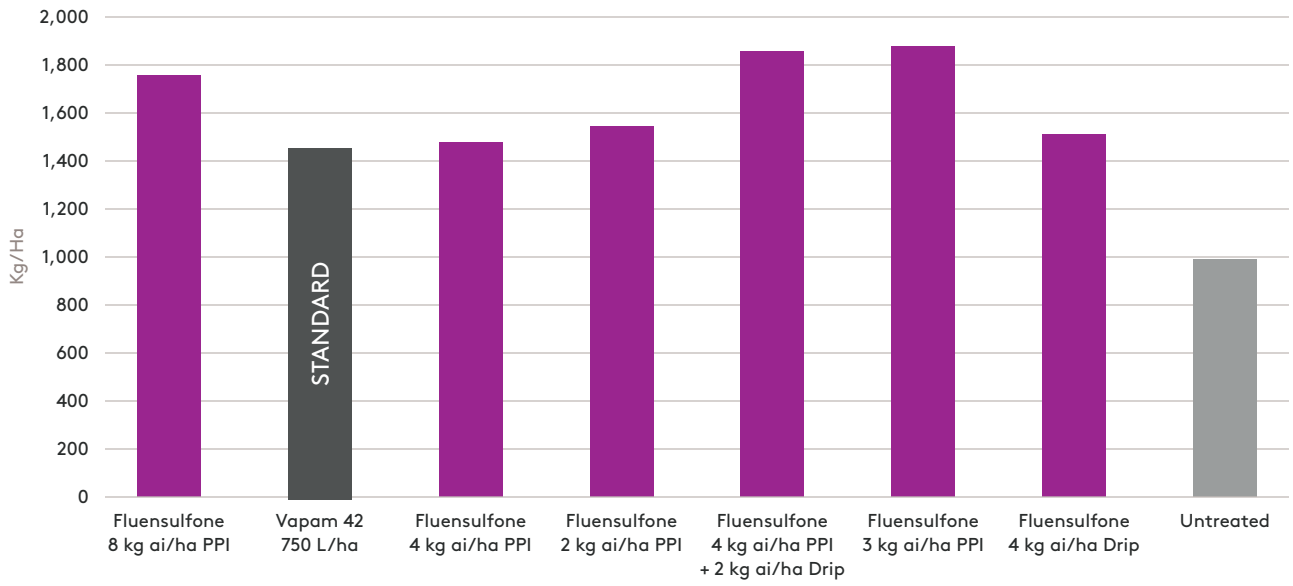
Apply the spray mixture across the band and uniformly incorporate to 15 – 20 cm avoiding dilution outside the band, a minimum of 7 days before transplanting. A light irrigation of 1.25 – 2.50 cm of water 1 – 5 days after application may increase efficacy. Following transplanting, resume normal irrigation practices. Rates should not be concentrated in the row, but should be applied based on percent of the area treated.

Drip (Trickle) Chemigation

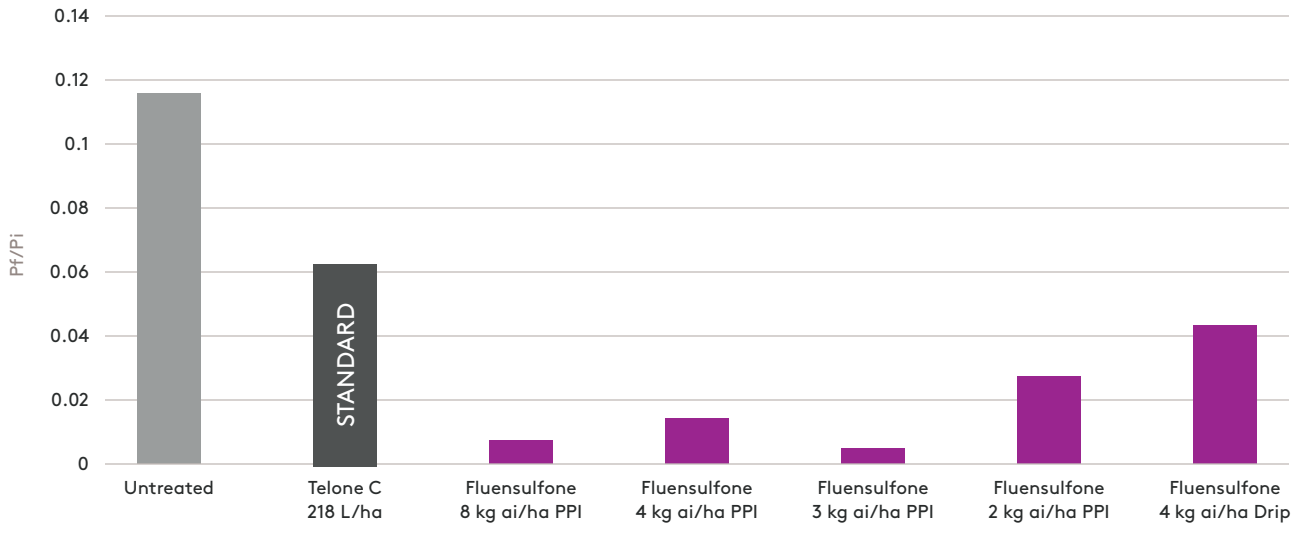
NIMITZ 480 EC can be applied through low volume drip, drip tape or strip tubing applied with sufficient water and duration to uniformly wet the entire bed width and root zone (15 – 20 cm deep) where crops are to be planted no less than 7 days before transplant. As for banded application, rates need not be concentrated in the row, but should be applied based on percentage of the area to be treated.

All applications of NIMITZ 480 EC should ensure that the NIMITZ 480 EC is evenly applied to the planting bed and allowed to act to control nematodes for a minimum of 3 days before subsequent irrigation to ensure dilution of the concentration of active ingredient in the target root zone prior to transplanting. The volume of water required and number of irrigations required is outlined on the product label and must be followed to ensure both efficacy and crop safety.

BRITISH COLUMBIA TRIAL – Bell Pepper Yield



ONTARIO CUCUMBER TRIAL – Pf/Pi Ratios for Cucumber Trial Conducted in Ontario



MANAGEMENT OPTIONS

There are a range of management options available for controlling root-knot nematodes, and successful strategies will usually involve the combination of several of these.

Options include but are not limited to:

- **Use of resistant or tolerant varieties**

  Choose varieties that have been selected for their ability to reduce nematode multiplication (i.e. resistant varieties) or are able to withstand nematode damage (i.e. tolerant varieties).

- **Use of crop rotation program**

  Reduce nematode populations by growing a *Meloidogyne*-resistant crop prior to planting a susceptible crop. Grow crops that are known to have a biofumigation effect when incorporated back into the soil (including those from the mustard or *Brassicaceae* family).

- **Practice of effective farm hygiene**

  Keep fields and other areas on farm as weed free as possible since weeds can act as root-knot nematode hosts, maintaining a bridge between crops.

  Use nematode-free seedlings and good farm sanitation such as cleaning machinery and equipment before moving between fields.

- **Use of root-knot nematode monitoring services**

  Tests are available to determine the presence and severity of nematodes and soil borne pathogens. Use these diagnostic tools to determine your most effective strategy.

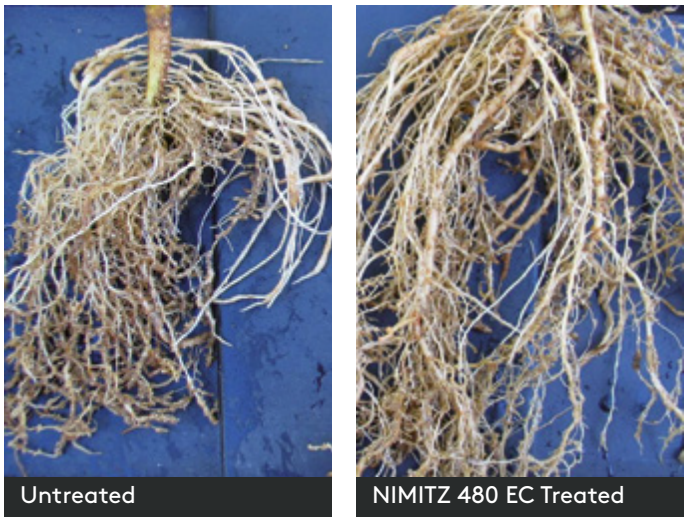
- **Use of biological controls and soil amendments**

  The addition of organic matter in the form of manure has been shown to provide a yield benefit not only from the increased availability of nutrients but also due to the suppression of plant pathogens including nematodes.

- **Use of contact or fumigant nematicides**

  Applying either fumigant or contact nematicides to reduce the impact of root-knot nematode remains an effective and integral part of many nematode management strategies. With its unique mode of action NIMITZ® 480 EC will ensure that chemical options remain a key tool of nematode management.

Healthy Rockmelon roots – Zecks Gall rating for RKN=0



NIMITZ 480 EC Untreated vs Treated Capsicum 84DAT

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