



Ethiopian Horticulture Producer Exporters Association

Registered (Recommended) Biological IPM Products Against Key Pests of Horticultural Crops Catalogue

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1. Introduction

Integrated Pest Management (IPM) is the most widely used sustainable pest management solution that integrates knowledge, skill, and multiple pest management practices against an economic pest of cultivated crops. With at most basic information about the pests, the crop plants and associated environmental factors within which both interacts, IPM aims to keep pest population below economic injury level with minimum impact to the environment.

The horticulture sector in Ethiopia (specially the ornamental part) is in an exponential growth yet facing a dozen of challenges from many pests due to lack of appropriate and sustainable pest management solutions to satisfy: -

- The ever-increasing restriction imposed by importing countries on the types of pesticide used and maximum residue level
- Different market standards such as zero tolerance against some pests
- Health and safety of the environment including the employees.

With this idea in mind, EHPEA-IPM department started verification research on biological products for their registration/recommendation as well as promotion of those effective products to the sector at large since 2017. The verification trails and promotion of effective products were conducted in partnership between research institutes (Ethiopian Institute of Agricultural Research and Agricultural Colleges of local Universities), product supplier companies (Koppert, Dudutech and RealIPM) and commercial horticultural crops farms. The partnership was founded on Memorandum of Understanding (MoU) that addressed the

responsibilities of the four parties. After the verification trails were reported, via proper channel, from the research institute to Ministry of Agriculture regulatory office (Now Ethiopian Agriculture Authority) the products are documented at the regulatory office for wider use by the farms.

Indeed, since 2017 a total of seven biological based IPM products were registered/recommended against some of the sector's key pests and documented in this catalogue for future references and uses by other farms. The catalogue also contains technical information for in-depth understanding of the products as provided by the product suppliers.

2. Registered/Recommended Biological Products

2.1 Beauvitech (*Beauveria bassiana*) (Entomopathogenic Fungus)

2.1.1. Introduction to Beauvitech

Beauvitech is a registered/recommended entomopathogenic fungal product for the management of whitefly (*Bemisia tabaci*), a key pest of many crops. It has been recommended on white fly infesting poinsettia cutting. The fungal product contains spores of *Beauveria bassiana* J25, a fungus which kills whiteflies and thrips through an entomopathogenic processes. Summary of the verification trials on Beauvitech has been provided in the table below.

Product name	BEAUVITECH® WP
Active agent	<i>Beauveria bassiana</i> J25
Agent Type	Insect-killing fungus (entomopathogenic fungus)
Product use (Pest)	Whiteflies (<i>Bemisia tabaci</i>) and others
Mode of Action	kills the insect by mechanical damage (resulting from tissue invasion), depletion of nutrients and release of toxins
Product company	Dudutech based in Kenya
Experimental Site	Dummen orange
Host Crop	Cutting, Poiensettia
Experiment done by	Melkassa Agricultural Research Center
Registered/recommended date	November, 2020

2.1.2. Mode of Action

Beauvitech brings the death of other pests and whitefly through mechanical infection process as follows:

1. **Attachment:** - The spores of *B. bassiana* attach to the insect body and germinate on.
2. **Penetration:** - Fungal hyphae through enzymatic action break the insect cuticle and penetrate the insect body.
3. **Multiplication:** - The fungus obtains nutrients from the insect and multiplies inside the insect, destroying internal tissues of the host insect.
4. **Death:** - The insect reduces its feeding and mobility and eventually dies after 3 - 5 days, depending on insect species, age, and conidial dose.
5. **Spore emergence:** - After insect death, spores emerge through the cuticle forming a white covering over the insect cadaver.

Note: - Relative humidity of above 70% and temperature between 18 - 30°C are essential for spore germination and further infection. Infection occurs within 24 -48 hours of contact with the fungal spores. The infected insect may live for 3-5 days after hyphal penetration.

2.1.3. Rate of Application

The recommended rate to be used based on the goal of white fly managers are as indicated in the below table.

Rate schedule (goal)	Dosage (g/ha)	Interval (days)
Preventative	250	14
Light/Medium Curative	250	7
Heavy Curative	250	5-7

2.1.4. Application Method

Beauvitech® WP is applied as a foliar spray and follows the below step by step procedures:

1. Mix **Beauvitech® WP** with water at the rate of 2 liters per 250g product; stir well to form a uniform suspension.
2. Add the suspension to the required volume of water in the spray tank and mix well.
3. Add the required amount of an appropriate wetter at recommended rates and mix thoroughly
4. After mixing with wetter, the product should be sprayed as soon as possible; DO NOT store overnight.
5. Apply using high volume spray equipment. Thorough coverage of the leaf surfaces where the insects are to be found is a must to obtain good efficacy.

2.1.5. Time of Application

Best results are achieved when applications are done late afternoon. Avoid spraying between 11am and 4pm when the UV light concentration is high and the relative humidity is low, as these factors affect *B. bassiana* spore germination. Avoid fungicides at least 12 hours before and after application.

2.1.6. Storage

Store **Beauvitech® WP** in a cool and dry place in tightly closed original pack. May be stored in original unopened container for six months at temperatures of 10 - 20°C. Do not freeze and do not allow the product to undergo thermal shock.

2.2. AMBLYTECH, *Amblyseius montdorensis* (Predatory mite)

2.2.1. Introduction to Amblytech

Amblytech contains a predatory mite, *Amblyseius montdorensis*, which feed on thrips in their immature

stages, and are also known to feed on Red Spider Mites. *A. montdorensis* are generally small, pale and pear shaped with a body size of between 0.3 – 0.5mm long.

A. montdorensis is a registered/recommended biological product for the management of Western flower thrips (*Frankliniella occidentalis*) in Ethiopia. Summary of the verification trials on Amblytech has been provided in the table below.

Product	AMBLYTECH M
Active agent	Predatory mites, <i>Amblyseius montdorensis</i>
Agent Type	Predatory mite
Product use (pest)	Western flower thrips (<i>Frankliniella occidentalis</i>)
Mode of Action	Adult and nymphal stages of the predatory mites actively search for and feed on their prey, thrips
Product company	Dudutech
Experimental Site	Florensis Ethiopia PLC
Host Crop	<i>Verbena x hybrida</i>
Experiment done by	Melkasa Agricultural Research Center
Registered date	October, 2020

2.2.2. Mode of action

Amblytech predatory mites actively hunt for and feed on their prey, thrips. They also feed on other pests such as whitefly, spider mites and hatching eggs of Homopteran pests, by crawling on affected plant leaves. The total life cycle from egg to adult is 7 days. Adult females lay single eggs onto leaf hairs strategically among thrips populations, eggs develop in 1 - 2 days. The larvae emerge and develop into protonymphs then deutonymphs which are also predatory, feeding on immature thrips.

2.2.3. Application method

Gently sprinkle Amblytech onto the crop. Hold the container in a horizontal position and rotate it carefully to evenly mix the predators with the carrier material. Sprinkle the entire contents of the container on to the crop foliage.

2.2.4. Rate of application

The recommended rates of Amblytech application based on the goal of thrips managers are as indicated in the below table.

Rate scheduled (goal)	Dosage per m ²	Interval (days)	Frequency	PHI & REI *
Preventative	25	14	As required	Not required
Light Curative	50	7	3	
Heavy Curative	75	5 - 7	5	

2.2.5. Best practice advice

- Use Amblytech to manage pest populations preventatively by targeting pests early in the season.
- Use immediately upon receipt.
- Micro-humidity should be above 60% and temperature during the day should be around 21°C.
- This predatory mite cannot be used to manage thrips where temperature is below 10°C, it can however maintain activity at temperatures of up to 40°C.
- Avoid overhead irrigation for at least 24 hours after application.
- Avoid using incompatible pesticides with this product.
- Before introducing Amblytech to your crop it is important that the plant is clean of negative chemical residues.

2.2.6. Storage and packaging of Amblytech

Amblytech storage and packaging shall consider the below requirements.

Storage

Storage temp.	15-18°C
Conditions	Dark and dry
Max storage time	1-2 days
Do not freeze. Store upright in original unopened container.	

Packaging

Predatory mites as packed	
Quantity	Pack Size
25,000	1000ml
150,000 Bulk Pack	5000ml

2.3. Trichotech, *Trichoderma asperellum* (multi-purpose fungus)

2.3.1. Introduction to Trichotech

Trichotech contains spores of *Trichoderma asperellum* a soil dwelling fungus that is beneficial to plants in many ways. The fungus is antagonistic to soil pathogenic fungi (*Fusarium* spp.); and has been used globally for control of soil borne fungal diseases caused by *Fusarium* spp., *Pythium* spp. and *Rhizoctonia* spp. In addition, the strain is known to increase plant vigor. A summary of the verification trail to recommend Trichotech against fusarium fungal diseases that cause wilting damage to crop plants is mentioned in the table below.

Product	TRICHOTECH
Active agent	<i>Trichoderma asperellum</i>
Agent Type	Antagonistic Fungi
Product use (Pest)	<i>Fusarium</i> spp.
Mode of Action	Grows and establishes around the root zone and controls soil borne pathogens through competition, antibiosis, mycoparasitism and growth promotion mechanisms
Product company	Dudutech
Experimental Site	Ethio-Magical Farm
Host crop	Carnation (<i>Dianthus caryophyllus</i> L.)
Experiment done by	Holeta Agricultural Research Center
Registered date	July, 2021

2.3.2. Mode of action

Trichotech acting mechanisms includes competition, antibiosis, parasitism and growth promotion as described below: -

1. **Competition** - Trichotech is a fast-growing fungus that easily out-competes soil pathogens, promoting niche exclusion of potential harmful microbes, and providing a barrier to combat disease causing fungi.
2. **Antibiosis** - Trichotech produces chemical metabolites, which inhibit various developmental stages of plant disease causing fungi.
3. **Mycoparasitism** - Trichotech produces enzymes that enable the fungus to invade and parasitize plant pathogenic fungi.
4. **Growth promotion** - Trichotech increases plant growth vigor by releasing locked nutrients from decaying organic matter; supplying nutrients to plant roots thereby promoting plant growth

2.3.3. Application method

Owing to its mode of action, Trichotech should be applied preventively - before diseases occur in the plants. The application recommendations vary depending on target crop and method of application: -

1. **Drip application** - Apply 125g of Trichotech per hectare. Add 125g of Trichotech® WP into 5 liters of water and mix thoroughly. Add the suspension into a large fertigation tank and make up the volume to 1,500L. Apply the suspension through the fertigation drip system. Agitate the mixture throughout the application period to ensure uniform distribution of the Trichotech in the water.

2. **Drench application** - Prepare a suspension of Trichotech at the rate of 125g/Ha in 5 liters of water and mix thoroughly. Add the mixture into a large drenching container and make up the volume of water to adequately cover the target area. Pour into a watering can or sprayer/applicator and apply evenly onto the target area. Irrigate the area treated with Trichotech after application.
3. **Dip application** - This is recommended as a pre-transplant application for rooted plantlets or cuttings. Prepare a paste of 125g/Ha Trichotech in 20L of water. Place rooted transplants/cuttings in a perforated crate and dip roots into the paste. Plant seedling as soon as they are dipped.

2.3.4. Rate of application

Trichotech application rates depending on the goals of the crop manager are as indicated in the table below.

RATE SCHEDULE	Dosage g/ha	Interval (days)	Frequency
Preventative/Maintenance	125	30	as needed
Light Curative	125	14	4 times
Then revert to maintenance.			
Medium Curative	125	14	2 times
Heavy Curative	Drench with another product with knock-down effect then revert to Maintenance		

2.3.5. Storage

Store Trichotech in a cool dry place, away from direct sunlight. Trichotech may be stored for up to 6 months in original unopened container maintained at 8 - 12°C.

2.4. Capsanem (*Steinernema carpocapsae*) (Entomopathogenic Nematode)

2.4.1. Introduction to Capsanem

Capsanem is an entomopathogenic nematodes and can be used for biological control of various insect pests in protected and outdoor crops. It is effective in a wide temperature range. Capsanem can also be applied as foliar treatment. Brief description of the verification trails on capsanem is narrated in the table below.

Product	Capsanem
Active agent	<i>Steinernema carpocapsae</i>
Agent Type	Entomopathogenic nematodes
Product use (Pest)	European pepper moth Caterpillar (<i>Du- ponchelia fovealis</i>)
Product company	Koppert Biological System
Experimental Site	Ethiopia-cutting PLC
Host crop	Pelargonium
Experiment done by	Melkasa Agricultural Research Center
Registered date	August, 2021

2.4.2. The Pests

- **Caterpillars (Lepidoptera):** Tomato leaf miner moth (*Tuta absoluta*); European pepper moth (*Duponchelia fovealis*); Box tree moth (*Cydalima perspectalis*); Cranberry girdler (*Crambus hortuellus*); Noctuidae: armyworms (*Spodoptera* spp.); Cotton bollworm (*Spodoptera littoralis*); Corn earworm (*Helicoverpa* spp.); Tomato looper (*Chrysodeixis chalcites*); cutworms (*Agrotis* spp.); Silver-Y moth (*Autographa gamma*)
- **Beetle larvae (Coleoptera):** Colorado potato beetle (*Leptinotarsa decemlineata*); Flatheaded root borer (*Capnodis tenebrionis*)
- **Fly larvae (Diptera):** Shore flies (*Scatella* spp.); Crane flies/leatherjackets (*Tipula* spp.)
- **Bugs (Hemiptera):** Tomato bug (*Nesidiocoris tenuis*); Sycamore lace bug (*Corythucha ciliata*)
- **Mole crickets:** European mole cricket (*Gryllotalpa gryllotalpa*); American mole crickets (*Neoscapteriscus* spp.) are all infected by capsanem

2.4.3. How Capsanem works

a) Mode of action: The nematodes enter the pest and release symbiotic bacteria into the pest's body cavity. These bacteria convert the host tissue into a food source, on which nematodes feed, develop, and reproduce inside the host. This kills the pest within a few hours to days after infection.

b) Visual effect: Infected pests are generally difficult to find. Infected foliar pests simply fall to the ground. Infected pest insects in the root zone turn yellow to brown but may be difficult to find due to rapid degradation.

2.4.4. Product specifications

Capsanem entomopathogenic nematode is available to users as specified in the table below

Pack size	1. 50 million - 2 sachets of 25 million. 2. 500 million – 2 sachets of 250 million in a box. 3. 2,500 million – 10 sachets of 250 million in a box
Developmental stage	Infective third-stage larvae (L3)
Concentration	86% <i>Steinernema carpocapsae</i> – 14% inert biodegradable carrier

2.4.5. Directions for use

a) Preparation

- Remove the sachets from the box and keep them at room temperature for 30 minutes
- Empty the contents of the sachets into a bucket containing at least 2 liters of water per sachet (water temperature: 15-20°C/59-68°F)
- Stir well and leave the contents to soak for five minutes
- Stir again and pour the contents of the bucket into the half-filled spray tank (except when tank mixing with a compatible product)
- Maintain agitation of mixture in the tank (e.g. with a recirculation pump)
- Fill the spray tank with the required amount of water
- If tank mixing with a compatible product, add Capsanem at the end to a fully filled tank
- Apply directly after preparation of spray solution

b) Application

- Nematodes can be applied using a watering can, an air blast sprayer, through a sprinkler system, with a backpack sprayer, or a vehicle-mounted spray unit
- To avoid blockage, all filters should be removed, especially if finer than 0.3 mm (50 mesh)
- Use a maximum pressure of 20 bar/290 psi (on nozzle)
- The spray nozzle opening should be at least 0.5 mm (500 microns - 35 mesh) - preferably high flow rate cone nozzle types
- Continuous mixing should take place to prevent nematodes sinking to the bottom of the spray tank
- Avoid sprayers equipped with centrifugal or piston pumps
- Water tank temperature must not exceed 25°C/77°F and pH must be between 4 and 8
- Distribute the spraying solution evenly over the soil/medium surface

c) Application through irrigation systems

- Pressure-compensated irrigation systems are recommended. If not available, spray or drench applications are recommended. For injection through Dosatron/Venturi systems, please contact your local representative for specific advice
- Spray the solution as soon as it is prepared and within a short timeframe (5 hours). Do not store mixed suspensions

d) Dosage: Capsanem is typically applied at a rate of 250,000 to 500,000 nematodes per m² for soil application and 1 to 3 million nematodes per liter for foliar applications (application to run off). Always check the product label for

more information.

e) Timing: Timing and frequency depend on the pest species and the crop environment (relative humidity, soil moisture and temperature). Consult a Koppert advisor or a recognized distributor of Koppert products for advice on the best strategy for your situation.

f) Environmental conditions

- *Steinernema carpocapsae* performs best at temperatures between 14-35°C/57-95°F
- Soil or air temperature below 5°C/41°F and above 35°C/95°F can be lethal
- Nematodes are susceptible to ultraviolet light (UV): do not use them in direct sunlight
- The moisture content of the soil must be kept high for several days after application. When possible, irrigate the crop before and right after application
- For foliar application, spray Capsanem when relative humidity will exceed 75% for several hours after the treatment
- Adding an adjuvant and/or an anti-desiccant/humectant can be beneficial. Ask your Koppert representative/distributor for more information
- Spray in the evening (or morning in some cases) allowing nematodes to work for several hours within the optimal range of temperature and humidity, as described above.

g) Side Effects & Compatibility

- Pesticides can have (in)direct effects on biological solutions
- As a rule, for tank mixing, always add the nematodes to a fully filled tank containing the compatible product
- The product is safe for most beneficial insects and mites,

but can have some effect on a few when in direct contact with foliar applied nematodes

2.4.6. Product handling

a) Storage time after receipt: See expiry date on the box. On average product can be stored for 2-3 months.

b) Storage temperature: Refrigerate at a temperature of 2-6°C/35-43°F in a ventilated refrigerator/cold room.

c) Storage conditions: Upon receipt, take boxes out of the insulating shipment packaging. Keep in a dark, ventilated refrigerator/cold room until use.

2.5. Chrysopa-E, *Chrysoperla carnea* (Predatory lacewing)

2.5.1. Introduction to Chrysopa

Chrysoperla carnea, one of the species of common green lacewing, is an insect in the Chrysopidae family. Although the adults feed on nectar, pollen and aphid honeydew, the larvae are active predators and feed on aphids and other small insects. It has been used in the biological control of insect pests on crops. The product can be used against aphids and other pests, like mealybugs, Echinothrips and butterfly and moth eggs. Brief information about the predatory green lacewing trail in Ethiopia is provided in the table below.

Product	Chrysopa-E
Active agent	<i>Chrysoperla carnea</i>
Agent Type	Predatory
Product use (the pest)	Mealybug and other pests
Product company	Koppert
Experimental Site	Red Fox

Crop	Poinsettia
Experiment done by	Melkassa Agricultural Research Center
Registered date	July, 2022

2.5.2. How Chrysopa works

a) Mode of action: Larvae of the lacewing attack their prey and suck their body fluids.

b) Visual effect: Prey is sucked out; shriveled skins are difficult to find. Chrysoperla carnea larvae are active mainly during the night. The larvae hide during the day.

2.5.3. Product specifications

Chrysopa specifications for use is as indicated in the table below

Pack size	100,000 eggs
Presentation	90 ml cardboard tube
Carrier	None

2.5.4. Directions for use

A. Application

- Shake the bottle or bucket gently before use
- Apply evenly on leaves
- Avoid clusters of eggs
- Can be applied with Air (o) bug only when mixed with (other products) with carrier material

B. Dosage: The dosage of Chrysopa-E depends on climate, crop and pest density and should always be adjusted to the situation. Introduction rates typically range from 10-100 eggs per m²/release. Releases should be made preventively or in infested areas

and repeated at weekly intervals until control is achieved. Consult a Koppert advisor or a recognized distributor of Koppert products for advice on the best strategy for your situation.

C. Environmental conditions: *Chrysoperla carnea* is effective in a wide temperature range including low temperatures (average > 12°C/54°F). It is most effective at 20-28°C (68-82°F).

D. Combined use: Can be used in combination with other aphid biocontrol agents.

2.5.5. Product handling

Storage time after receipt: 1-2 days.

Storage temperature: 8-10°C/47-50°F.

Storage conditions: In the dark, bottle horizontally

2.6. Real Californicus, Amblyseius Californicus (Predatory mite)

2.6.1. Introduction to Real Californicus

Real Californicus contains a predatory mite *Amblyseius Californicus* for the management of spider mites. The predatory mite feeds on spider mites' and broad mites' eggs, nymphs, and adults.

2.6.2. Optimum environmental conditions

- Active within temperature range of 13-35°C.
- Total development time at 21°C is 10 days while at 30°C it reduces to 5 days.
- The predatory mite prefers low humidity
- These optimum environmental conditions align with those of the principal prey (spider mites), making it a perfect predator

2.6.3. Application rate and time

The recommended rate of real californicus against pest mites is 5 – 10 predatory mites per square meter. The pest and predators shall be scouted consistently and often. The best time to apply predatory

mites is before pest populations reach their peak, so early application can increase their effectiveness. As with all biological control agents, Real Californicus works best as one component of a comprehensive integrated pest management (IPM) program.

2.6.4. Mode of Action and storage

Mode of action: Pierces and suck out contents of prey. As Californicus are live predators, it goes that they are sensitive to some pesticides applied on the crop.

Storage:

- It is always better to use Real Californicus as soon as possible after receipt.
- If storage is unavoidable, keep at 10-15°C and at least 85% relative humidity for the shortest amount of time possible.
- Keep the product in a dark place away from direct sunlight with enough ventilation to avoid the narcotic effects of a possible CO₂.
- Nevertheless, always introduce the predatory mites as soon as possible to prevent unpredictable temperature fluctuations!

2.7. Hypotech, Hypoaspis miles (Predatory mite)

2.7.1. Introduction to Hypotech

Hypotech contains the predatory mite *Hypoaspis miles* used for the management of thrips, fungus gnats, leaf miner, sciarid flies and shore flies. The adults of *H. miles* are about 1mm in size and normally brown. The larvae and first nymphal stages are white in color. The *Hypoaspis* are normally dispersed on to a growth media before or after planting or later on in the early growth period of the crop. Mixing of the *Hypoaspis* into the growth media is not recommended. Best results are realized when Hypotech is applied before the target pest is well established.

2.7.2. Mode of Action

Adults and nymphs feed on thrips pupae, and larvae of sciarid flies and other soil living insects. The mites can be observed in and on the soil/media feeding within the upper 2 cm and at the base of the plant stems. Seldom you would find *Hypoaspis* occurring on the plants. A slow but steady reduction of the infestation level will be noticed.

2.7.3. Environmental condition, rates and storage

Predator prefers humid and moist soil/media conditions, but it must not be too wet, they prefer rich organic matter with an open structure and temperature ranges of between 15-30° c. It is recommended to apply 50-300 mites per m² or 500,000-3,000,000 mites per hectare. Higher rates are recommended where the target pest has established. The predators shall be stored after receipt for a maximum of 1-2 days; normally recommended to use within 24 hrs of receipt. Store and transport at temperatures of 10-20° c out of direct sunlight.

2.8. NEMATECH S, *Steinernema feltiae* (Entomopathogenic Nematode)

2.8.1. Introduction to Nematech S

Nematech S is a biological insecticide containing infective juveniles of *Steinernema feltiae* (isolate DDT – D2) in an inert carrier for the control of thrips and Sciarid flies in both field and greenhouse set up.

2.8.2. Method of application

For the management of thrips in field and greenhouse crops, Nematech S may be applied as a foliar spray (in closed greenhouse) or as a soil drench. For the control of the larval Sciarid flies (Diptera: Sciaridae) on mushrooms, Nematech S may be applied to the site at which management is required, by any standard method used

in pesticide application. This include incorporating into compost forming the mushroom bed, incorporating into the casing layer of the mushroom bed, spraying onto compost contained in or the casing layer of, the mushroom bed or applying Nematech S to the mushroom bed as a spray drench or with irrigation water during cultivation.

2.8.3. Preparation

Mix the required amount of the water-soluble product with water (15 – 20°C) and stir well to form a uniform suspension. Apply to the garden or compost mix using a watering can and onto larger areas using drip irrigation or standard high volume spray equipment at a minimum water rate of 1000 liters per Ha. Use a maximum pressure of 5 bars and spray nozzles of at least 0.5 mm. All filters must be removed to avoid blockage. Applications should be done early morning or late evening for maximum target reach, ensure continuous mixing during application. Irrigate immediately after application in case of soil drench. Use the entire package content.

2.8.4. Rates, Frequency of Application, Storage and compatibility

Rate: Apply 2.0-2.5 billion Juveniles of *Steinernema feltiae* per hectare (200,000-250,000 juveniles per square metre).

Frequency: Depending on the pest pressure Nematech S can be applied between 2-3 times every 5 –14 days apart. When the pest pressure is high applied three times one week apart. When the pressure is low apply once every 4 weeks.

Storage: Nematech S ® SP is packed in a 1.2-liter container with 250 million infective juveniles in an inert carrier. Store and transport at 8-12°C, do not freeze. Maximum storage time in original unopened container is 3 months from date of manufacture.

Compatibility: Although Nematech S is compatible with most

fungicides and insecticides tank mixing is not recommended. Simultaneous use of Nematicide must be avoided.

Summary of Biological IPM Products Recommended in Ethiopia and the target pests

Summary of Biological IPM Products Recommended in Ethiopia and the target pests

SN	The Products	Source Companies	Target pests
1	Beauvitech	Dudutech	Whitefly
2	Amblytech	Dudutech	Western flower thrips
3	Trichotech	Dudutech	Fusarium wilt
4	Capsanem	Koppert	European pepper moth caterpillar
5	Chrysopa	Koppert	Mealybug
6	Real Californicus	Real IPM	Mites
7	Hypotech	Dudutech	Western flower thrips
8	Nematech S	Dudutech	Western flower thrips



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