

BIOPROTECTORS



BIOPROTECTORS INTRODUCTION

The intensive use of synthetic pesticides in pest control activities can cause resistance and therefore resurgence of target pests. Undesirable effects on the environment, including reduction in natural enemies (predators and parasitoids) and beneficial insects, are also possible.

A major concern is the effects of synthetic pesticides on human health. In the last few decades, **bioprotectors have emerged as a potential alternative to synthetic pesticides.**

The information contained in these data sheets is result of the work of the people that make up the Department of Research and Development of **SONARAGRO**. His experience acquired from the bibliography, laboratory and field experiences, have allowed us to design the products included in this section.

"Botanicals are future potential sources for development of ecofriendly products for crop protection and nutrition"

- Nagappan Raja 2014.



BIOPROTECTORS



BIOPROTECTORS PRODUCTS



MELCRON



**NEMATURAL
PLUS**
BOTANICAL



**QUITO
CARE**



Spineka

MELCRON

BIOPROTECTORS PRODUCTS



Bioprotector



BIOPROTECTORS

COMPOSITION

%W/V

Soy Lecithin	28,00
Tea Tree Oil (Melaleuca alternifolia)	20,00
Vegetable Oils	22,00

CHARACTERISTICS

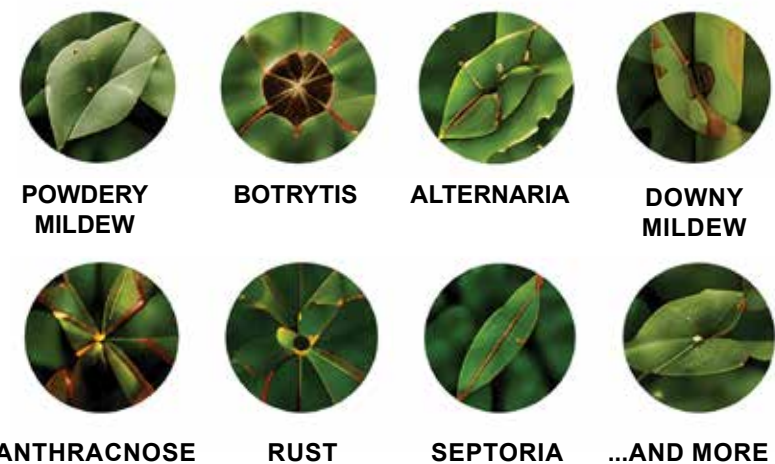
MELCRON is a broad-spectrum contact botanical biofungicide formulated with tea tree oil, soy lecithin and vegetable oils. The synergistic action of its natural-origin ingredients delivers effective, safe and sustainable protection against a wide range of phytopathogenic fungi.

MELCRON delivers broad-spectrum protection against a wide range of phytopathogenic fungi, including powdery mildew, Botrytis, Alternaria and downy mildew. Formulated with ingredients of 100% botanical origin, it provides a natural, safe and biodegradable solution that respects people, animals and the environment, while its multiple modes of action help minimize the risk of resistance development.

MODE OF ACTION

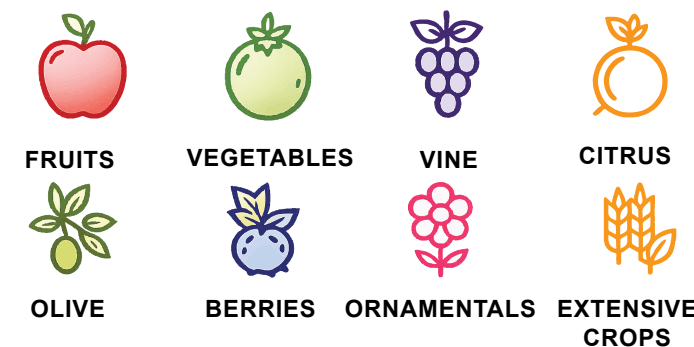
- 🔴 **FUNGISTATIC AND FUNGICIDAL ACTION BY CONTACT.**
- 🔴 **ALTERS THE STRUCTURE AND PERMEABILITY OF THE FUNGAL CELL WALL.**
- 🔴 **SOY LECITHIN IMPROVES DISPERSION, COVERAGE AND PENETRATION.**
- 🔴 **INDUCES NATURAL DEFENSE RESPONSES IN THE PLANT.**

CONTROLLED PATHOGENS



APPLICATION

CROPS



DOSAGE

1.0 – 2.0 L/ha

Make 2 to 4 applications depending on disease pressure.

NEMATURAL PLUS

BOTANICAL



Natural Nematicide
Bioprotector



soil



foliar



Natural
Protection

Parasitic
nematode
control

250cc

500cc

1L

5L

20L

1000L



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COMPOSITION %W/V

Plant extract (Gramineae Sp.)	70.0
Phosphorus (P ₂ O ₅)	8.0
Potassium (K ₂ O)	4.0
L-Amino Acids	2.0

CHARACTERISTICS

NEMATURAL PLUS is a naturally derived bione-maticide for control of parasitics nematodes in agricultural and ornamental crop. May be applied by ground spray applications, drip irrigation, overhead irrigation system or fertirrigation systems. Control and prevents plant parasitic nematodes using several modes of action:

DIRECT ACTION:

NEMATURAL PLUS gost to work immediately the nematode and damage its cuticle. Causes nematode immobilization and desorientation, making it more difficult for them to reach plant roots.

REPELLENCY:

NEMATURAL PLUS helps repel nematodes so that they are unable to reach plant roots. Without being able to reach roots and feed, nematodes will die after they have depleted their lipid reserves.

ADVANTAGES

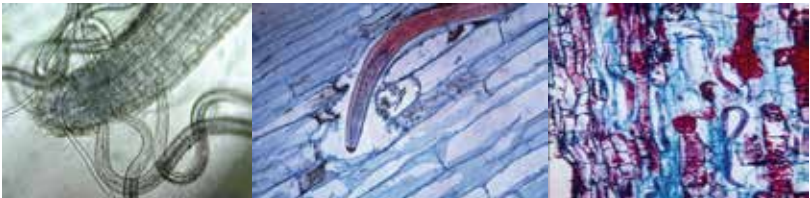
- Effective, broad spectrum nematicide.
- Sustainable and environmentally friendly.
- Can be used in Nematode Management Programs with other chemical nematicides, nutrients and cultural practices.
- Workers can re/enter the field immediately after application.
- No pre or post harvest application limitations.
- For use in conventional and organic production.

CAUTION

Nemantural Botanical is compatible with most foliar fertilizers and plant protection products.

DOSES AND APPLICATION

CROPS	L/ha	Applications (1,2 or 3)
Aubergine	10-30	Transplant - at 30 days
Banana	40-60	April - September
Citrus	20-40	After fruit curd - at 30 days - at 45 days
Cucumber	10-20	Transplant - at 30 days - at 30 days
Fruit	10-20	After fruit set - at 30 days
Garlic	10-20	Transplant - at 30 days
Grape	15-40	After flowering - at 30 days
Green bean	10-25	Beginning of crop
Lawn	10-20	After - at 21 days - at 21 days
Melon, watermelon	10-25	Transplant - at 21 days
Onion	10-20	Transplant - at 30 days
Ornamental	10-40	After cutting - at 30 days - at 30 days
Pepper	15-30	Transplant - at 30 days - at 30 days
Pineapple	40-60	february - July
Potato	10-25	Seeding - at 21 days
Strawberry	20-40	Transplanting - at 21 days
Tobacco	20-30	Transplant - at 30 days
Tomato	20-40	Transplant - at 30 days - at 30 days
Zucchini	10-20	At the beginning of crop



Belonalimus spp.

Hoplaimus galeatus

Pratylenchus spp.

QUITO CARE



Fungicide, bactericide,
elicitor



BIOPROTECTORS PRODUCTS

CHARACTERISTICS

QUITO CARE is a biopesticide composed of biochemicals obtained from natural sources (Chitin). Chitosan is a polymer of β -(1-4) D-glucosamine, a partially deacetylated form of quinine. It can be obtained from natural sources of chitin (crustacean shells, squid feathers, etc.) from seafood processing plants. Chitosan and its derivatives exhibit antimicrobial activity against bacteria and fungi. The bactericidal action is due to the fact that:

1. It destabilizes cell membranes, causing the loss of cell contents.
2. Inhibits the germination of phytopathogenic fungal spores.
3. It affects their growth, inducing morphological and ultrastructural alterations in the hyphae.
4. It causes a reduction in the production of toxins from plant pathogenic fungi.

QUITO CARE has fungistatic properties against both airborne and root diseases. When applied to plants, cells receive the same stimulus as if they were being attacked by a disease. This promotes the activation of the Systemic Acquired Resistance (SAR) mechanism, providing an immune response against diseases.

COMPOSITION	%w/w
Chitin (Poly-D-glucosamine)	3,0
Density: 1,01	
pH: 5	

DOSES AND APPLICATION

CROPS	OBJECTIVE	TIME OF APPLICATION	TYPE OF APPLICATION	Nº OF APPL.	INTERVAL BETWEEN APPL.	DOSAGE	BROTH VOLUME/SOLUTION (L/HA)
Berries and small fruits (grapes, strawberries, cane fruits, and other berries and small fruits)		From leaf development (main shoot) or fruit development	Foliar	4 - 8	2 weeks	3-5L/hl	200 - 400
Horticultural		Before planting	Foliar	1	2 weeks	3-5L/hl	200 - 400
Cereals		Before planting	Foliar	1	2 weeks	3-5L/hl	200 - 400
Spices	Plant Elicitor, an indicator of resistance to pathogenic fungi and bacteria	Before planting	Foliar	1	2 weeks	3-5L/hl	200 - 400
Animal feed crops		Before planting	Foliar	1	2 weeks	2-3L/hl	200 - 400
Cereals Seed Treatment		Before planting	Foliar	1	----	2-3L/hl	----
Sugarbeet Seed Treatment		Before planting	Bulb Treatment: 1 Dipping/Soaking	1	----	2-3L/hl	----
Bulbous ornamental plants		Germination	Foliar	1 - 8	5-7 days	3-5L/hl	200 - 400
		Foliar development – senescensio					200 - 400
Beet cultivation		Foliar development – senescensio	Foliar	1 - 8	5-7 days	3-5L/hl	200 - 400

Spineka

BIOPROTECTORS PRODUCTS



Bioinsecticide / acaricide



foliar



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COMPOSITION %W/V

Active molecular fractions obtained from Umbelliferae	96,0
Zinc (Zn)	2,0
Manganese (Mn)	2,0

CHARACTERISTICS

Spineka is an Bio-insecticide / acaricide of natural origin. It's highly recommended for the Red Spider Mite and others.

Spineka is a liquid formulation which contains an active molecular fraction obtained from leaves fractionation from Umbelliferae family.

This product has a mixture of lipid and organic surfactants as complements. Within each of them there is a formation of polymeric and biodegradable microspheres.

All of them enhance the product dispersion and adhesion, showing its high efficiency.

ACTIONS

Instant death by asphyxiation due to the filling of a tracheal Stigma

The protective layer of the insect is destroyed, causing dehydration and subsequent death by suffocation

DOSES AND APPLICATION



RECOMMENDED
FOR RED SPIDER
MITES AND
OTHER PESTS



CROPS

Extensive crops, tomatoes, corn, cotton, citric trees.

SPINEKA L /WATER L

2-3 /1000



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