



# BIOINSECTICIDE

*Metarhizium brunneum* strain Ma 43

# LALGUARD M52<sup>OD</sup>

Broad spectrum bioinsecticide for sustainable pest management

## Fight effectively against pests for greenhouse and open field crops

LALGUARD M52 OD is a biological insecticide, based on *Metarhizium brunneum* strain Ma 43. Formulated as viable spores encapsulated in oil microdroplets, this technology allows a better survival of the fungi providing a good control on several pests in a wide range of crops.



 LIQUID

## MODES OF ACTION

### 1 ADHESION

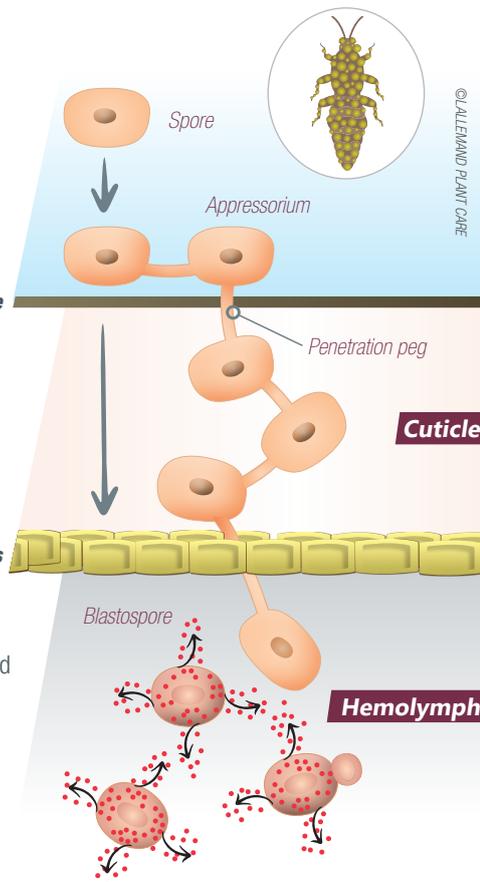
After the application, the fungus spores adhere to the insect body producing a germinative tube almost immediately.

### 2 PENETRATION

The germinative tube produces a wide variety of enzymes to break the insect cuticle defenses and allow it to penetrate and reach the interior of the insect.

### 3 COLONISATION

A huge number of new single-cells, called blastospores, are produced and spread all along the insect body, followed by a massive growth of fungus, turning the insect brown as a result of the necrosis of its body and death in a matter of 3 to 7 days.



## BENEFITS

- Proven efficacy against a wide range of pests in greenhouse and open-field conditions: fruiting vegetables, strawberries, leeks, onions and ornamentals

## ADVANTAGES

- Excellent tool for pest resistance management
- Safe for users and most beneficial insects
- Compatibility with integrated pest management programs
- Residues exemption: production of healthy food

## USAGE RECOMMENDATIONS

CROP GROWTH STAGE	PEST OCCURRENCE	HOW TO INCORPORATE	BENEFITS
<b>PREVENTIVE</b> Early crop season	 First pest appearance	Start the crop season with LALGUARD M52 OD applications, 3 to 7 day intervals	Delays increase of pest infestation
<b>ROTATIONAL</b>	 Pest population outbreak	Rotate LALGUARD M52 OD with conventional products to knockdown pest populations	Reduces risk of resistance
	 Pest management	Rotate LALGUARD M52 OD with conventional products	Tolerance exemption reduces residues in harvested crops

Shake well before using.

Premix in a bucket with at least 5L of water, assure the product is homogeneously mixed.

Fill half of the tank with water and add LALGUARD M52OD premix to complete the rest of water in the tank while mixing.

Triple-rinse the bottle and pour the content in the tank

Use the mixture within 24 hours.

Assure good coverage of the plant, including the underside of the leaf

Apply between 15°C to 35°C and >50% relative humidity

Spraying pressure <1380 KPa (200 psi)

Application via cold foggers and other non-thermal ultra low-volume sprayers is ideal for greenhouse crops

Do not use thermal foggers for application

## COMPATIBILITY:

In a rotational program, LALGUARD M52 OD is compatible with many fungicides, insecticides and beneficial insects and can be used in Integrated Pest Management (IPM) programs. Please refer to the compatibility table before spraying.

## APPROVED USES

MAJOR USES	TARGET	DOSE	MAXIMAL DOSE RATE	MAXIMAL NUMBER	INTERVAL (DAYS)	PHI (HOURS)
Strawberry (covered cultivation)	Mites	0.12% (0.12 L per 100 L water)	2 L/ha	10 per year	3	4
Fruit vegetables from cucurbitaceae with edible skin and non edible peel (covered cultivation)	Thrips, white fly	0.12% (0.12 L per 100 L water)	1.8 L/ha	10 per year	3	4
Fruit vegetables of Solanaceae	Thrips	0.12% (0.12 L per 100 L water)	1.8 L/ha	10 per year	3	4
Onion-like and Leek (uncovered cultivation)	Thrips	1.25 L/ha	1.25 L/ha	6 per year	7	4
Gerbera (covered cultivation)	White fly	0.12% (0.12 L per 100 L water)	1.8 L/ha	10 per year	3	-

Owner of the registration:

DANSTAR FERMENT A.G.  
Poststrasse 30,  
CH-6300 Zug  
SWITZERLAND

## CHARACTERISTICS

- ACTIVE INGREDIENT:** *Metarhizium brunneum* strain Ma 43 at 2.10<sup>9</sup> CFU\*/ml  
*\*CFU: Colony Forming Unit. Unit of measure for living microorganisms able to multiply*
- FORMULATION:** oil dispersible (OD)
- PACKAGING:** 1 L
- STORAGE:** 24 months at ambient conditions (22°C ±2°C)
- Usable in organic farming**

MINOR USES	TYPE	TARGET	MAXIMAL DOSE RATE
Perennials, container cultivation	Drench	Vine weevil	0.23 L/m <sup>3</sup>
Potted plants (covered cultivation) Nursery Crops, container cultivation	Drench	Vine weevil, thrips	0.23 L/m <sup>3</sup>
Plum	Foliar	Caterpillars	1.8 L/ha
Cherry	Foliar	Mites	1.8 L/ha
Berries (uncovered cultivation)	Foliar	Thrips, mites	1.2 L/ha
Strawberry and Grape (uncovered cultivation)	Foliar	Thrips, mites	1.25 L/ha
Kiwi (uncovered cultivation)	Foliar	Thrips, white fly, mites	1.2 L/ha
Oilseeds Fibre crops, Legumes Blackberry and raspberry-like (uncovered cultivation), Fruit vegetables from Cucurbitaceae (uncovered cultivation), Cabbage crops (covered cultivation), Stem vegetables (covered cultivation), Herb cultivation fresh or dried Ornamental shrubs (uncovered cultivation) Heath types (uncovered cultivation), Forest and hedge planting stock (uncovered cultivation), Fruit trees and shrubs (uncovered cultivation), Perennial cultivation, Breeding and seed cultivation (covered cultivation), Uncovered cultivation of: Breeding and seed cultivation of vegetable crops, fruit crops, herbs, ornamental crops, beets, oleaginousseeds, fiber crops, green manure crops, forage and chicory, chicory, buckwheat, hops and madder	Foliar	Thrips, white fly, mites	1.25 L/ha
Berries (covered cultivation) Blackberry and raspberry-like (covered cultivation) Nursery crops (covered)	Foliar	Thrips, white fly, mites	1.5 L/ha
Grape (covered cultivation), Fig (covered cultivation), Kiwi (covered cultivation), Bean with pod (covered cultivation); Bulb flowers and tubers (covered cultivation), Cut flowers (covered cultivation)	Foliar	Thrips, white fly, mites	1.8 L/ha
Floristry crops (uncovered cultivation)	Foliar	White fly	1.25 L/ha
Floristry crops (ground-bound covered cultivation)	Soil	Thrips	10 L/ha
Oilseeds, Fibre crops, Legumes, Lupin (legume), Field bean (legume), Chicory, Sod cultivation, Berries, Breeding and seed cultivation of vegetable crops, fruit crops, herbs, ornamental crops, beets, oleaginousseeds, fiber crops, green manure crops, forage and chicory, chicory, buckwheat, hops and madder, Kiwi, Leafy vegetables, Cabbage crops (covered cultivation), Root and tuber vegetables, Asparagus, Herb cultivation fresh or dried, Gladiolus (uncovered cultivation), Floristry crops (uncovered cultivation), Nursery crops (covered cultivation), Perennial cultivation, Breeding and seed cultivation (covered cultivation)	Soil	Wireworm, leatherjacket	5.6 L/ha