Andermatt
Madumbi

Biological Solutions

Bio Crop Protection

Madex®

Reg. No. L7950, Act 36 of 1947

Bio Crop Protection | Root Health | Plant Vitality

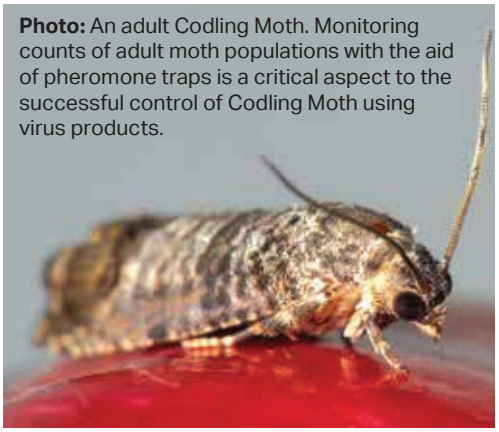

Photo: An adult Codling Moth. Monitoring counts of adult moth populations with the aid of pheromone traps is a critical aspect to the successful control of Codling Moth using virus products.

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Innovative biological granulovirus technology for the suppression of Codling Moth (*Cydia pomonella*) on various crops as specified on the label.

Why use Madex®?

Features	Benefits
Manufactured in Switzerland to the highest standard by world renowned virus specialists, Andermatt Biocontrol Suisse AG.	Proven and consistent efficacy against Codling moth on a variety of crops.
Highly effective when applied as recommended.	An effective granulovirus product is one of the best tools available to reduce target pest populations.
Very specific target range.	Madex® will not affect any beneficial organisms and is harmless to bees.
Unique mode of action.	Mode of action of virus products are different from chemical insecticides, making Madex® ideal to use in IPM and resistance management programs.
User friendly SC formulation.	Advanced formulation allows for: • Versatile application options. • Lipophilic characteristics ensure excellent adhesion and rainfastness once dried off. • Excellent shelf life of minimum 24 months at 4°C, unlimited if kept at -18°C. • Can be tank mixed with most agricultural products if pH of the mixing tank is correctly managed.
Non-toxic, no MRL requirements and has no withholding period.	Madex® is suitable for organic and conventional agriculture and can be applied during the harvesting period.

How does Madex® work?

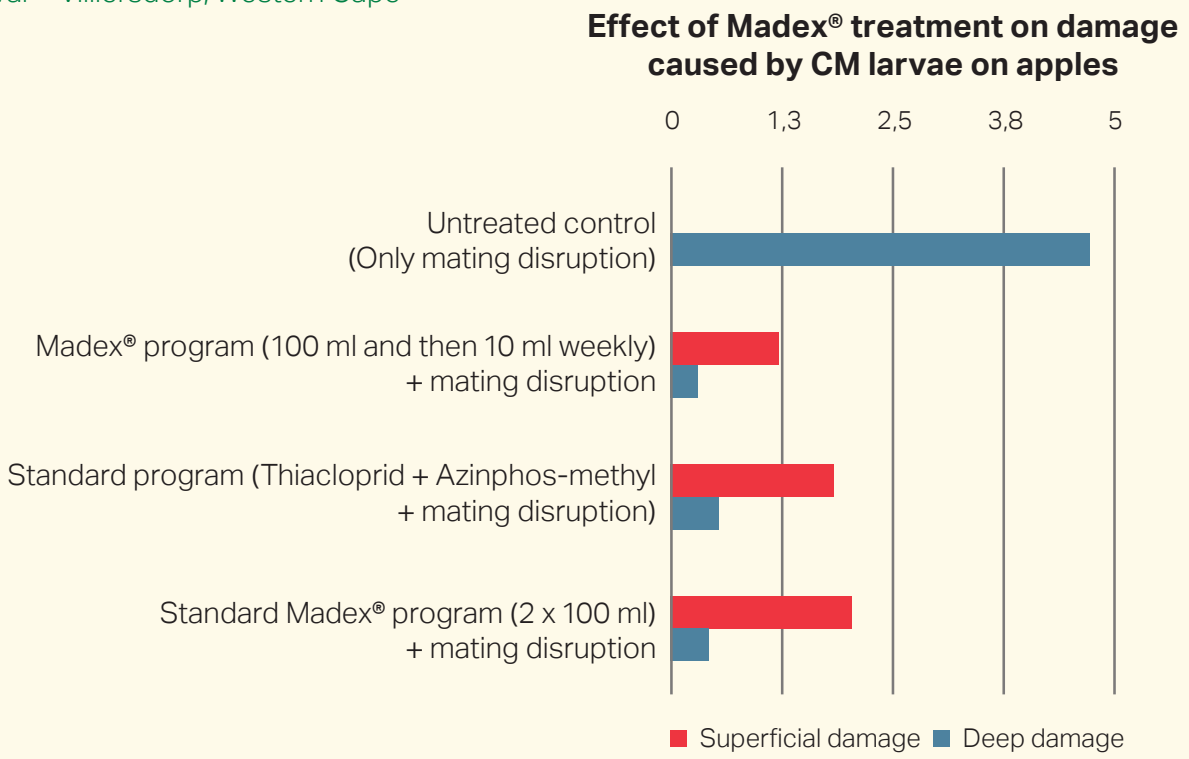
Madex®, containing a *Cydia pomonella* Granulovirus is species specific and only active against Codling Moth (CM) larvae. Applications of Madex® should always be targeted to the first peak moth flight to effectively reduce the first generation of larvae. This product contains encapsulated virus particles, it is not a contact insecticide and has to be ingested by CM larvae to be effective. Once ingested the alkaline conditions in the CM midgut dissolves the protective capsule, activating the virus particle which infects and replicates in insect cells resulting in death of the infected larvae. Buffering of the spray mix (pH 5 to 8) is extremely important, very alkaline or acidic conditions could dissolve the protective capsule surrounding the virus particle in the spray tank and this will decrease the virus particle's tolerance to environmental conditions as well as overall efficacy.

Photos above: Codling Moth larvae infected with virus particles.

Trial data:

Efficacy of Madex® against Codling moth (*Cydia pomonella*) on apples

Fuji cultivar – Villiersdorp, Western Cape



Figures above: The graph above compares the percentage SUPERFICIAL and DEEP damage caused to apples by CM after application of various treatments. All treatments except the untreated had superficial damage. This is normal for virus products, because virus particles must be ingested before it becomes active. After activation the virus causes death of the CM larvae and limits deep damage. Note the difference between subsequent deep damage in the treated vs. untreated plots. The untreated control had no superficial damage but a high incidence of deep damage – this is because nothing prevented the larvae from causing deep damage. Madex® at all the rates provided significant reduction of deep damage caused by CM larvae. The Madex® program (100 ml up front and then 10 ml weekly) performed exceptionally well and was the best treatment overall.

Above: Codling moth damage on apple – example of superficial damage.

Above: Codling moth damage on apples – example of deep damage.

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Madex® – production, formulation and quality control:

Andermatt Biocontrol Suisse is the leading producer of virus products and has more than 36 years' experience in the production of viruses for commercial pest control.

Granulovirus particles are covered by a natural occlusion capsule (occluded viruses), which protects the virus from environmental factors. Inadequate procedures during the production process, improper timing of virus harvest, incorrect formulation and inappropriate co-formulants can lead to incomplete or damaged occluded viruses resulting in reduced stability which will impact on the efficacy of the virus product. Andermatt Biocontrol Suisse AG has optimised the production procedure to ensure that the virus particles in Madex® are not damaged during the production process and maintain their virulence even under varying application conditions. Product quality is very important to this Swiss company and therefore the efficacy of all their virus products are determined by evaluating the product on the relevant host insect itself. In the case of Madex® each batch produced is tested via bioassay against CM larvae. The quality control on CM larvae ensures that only product of high efficacy against CM is offered to the market.

Registered uses

Pest	Crop	Dose rate
Codling moth	Apples and pears	Refer to the Madex® label for detailed application instructions.

Available in: 500 ml, 5 L

Registered, Marketed and Distributed by:

Andermatt Madumbi

Manufactured by:

Andermatt Biocontrol Suisse

Andermatt Madumbi

Healthy Food and Healthy Environment, for all

T: +27 (0) 33 342 3984
E: support@andermatt.co.za
W: www.andermatt.co.za
Andermatt Madumbi App
ONLINE SHOP

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