

## WARNINGS & PRECAUTIONS

- Avoid direct contact with eyes. In case of accidental contact immediately flush eyes with clean water.
- Avoid contact with skin, wash exposed hands before consuming food, drinking or smoking.
- Do not inhale spray mist. Do not eat, drink or smoke whilst mixing or applying.
- Wash hands with soap and water after application.
- Prevent contamination of food, foodstuffs, drinking water and eating utensils.
- Clean applicator before and after use. Do not contaminate other crops, grazing, rivers, dams and areas not under treatment with wash water.
- Store in original container in a dry area, away from food and feed stuffs.
- Rinse empty container three times with a volume of water equal to a minimum of 10% of that of the container. Add the rinsing water to the contents of the spray or mixing tank. Destroy the container and do not use empty container for any other purpose.
- May irritate skin and eyes.
- Keep out of reach of children, uninformed persons and animals.
- The active ingredient of **Bolldex**<sup>®</sup> contains virus particles.
- During storage, and when in transit, it is important to keep the cold chain intact. With time and excessive high temperatures these virus particles, like most biological organisms, become less viable leading to reduced efficacy.
- **Bolldex**<sup>®</sup> will remain viable for up to 24 months if stored in a cold room at 4°C.
- Do not leave the product or mixture standing in the sun.

Peel label back for enclosed instructions and detailed application information.



CAUTION  
VERSIGTIG



# Bolldex<sup>®</sup>

Reg. No. L8895, Act No. 36 of 1947 / N-AR1348

GROUP

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INSECTICIDE

A nucleopolyhedrovirus (HearNPV) suspension concentrate formulation for the biological reduction of African bollworm (ABW) *Helicoverpa armigera* larvae.



**Andermatt**  
Madumbi



500ml

## Active ingredient

*Helicoverpa armigera* nucleopolyhedrovirus (HearNPV) (Min 7.5 x 10<sup>12</sup> occlusion bodies per litre)

Registered and distributed by:

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Manufactured by:

Andermatt Biocontrol AG

Country of Origin: Switzerland

Founding Member:

**SABO**

South African Bioproducts Organisation



DRAFT

30.06.2021



Batch No:  
Expiry date:

PEEL

# **Bolldex**<sup>®</sup>

Reg. No. L8895, Act No. 36 of 1947 / N-AR1348

**A suspension concentrate of a Nucleopolyhedrovirus (HearNPV) for the control of African Bollworm (*Helicoverpa armigera*) on all crops.**

**Active ingredient:** *Helicoverpa armigera* Nucleopolyhedrovirus (HearNPV) with a concentration of  $7.5 \times 10^{12}$  occlusion bodies per litre.

**DISCLAIMER:** Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal soil, climatic and storage conditions, quality of dilution water; compatibility with other substances not indicated on the label as well as by the method, time and accuracy of application. The registration holder, furthermore, does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animals; the lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of conditions which could not have been foreseen in terms of registration. Please consult the supplier in the event of any uncertainty.

## **DIRECTIONS FOR USE - USE ONLY AS DIRECTED.**

### **COMPATIBILITY**

*Bolldex*<sup>®</sup> contains virus particles but can be tank mixed with most pesticides as long as the pH is managed. Ensure that the final pH in the tank is in the range of 5 to 8 before the virus product is added. Tank mixes with Copper are not advisable.

## **MIXING INSTRUCTIONS**

- Shake container well before use.
- Fill spray tank with half the required water volume and start agitator mechanism.
- Add the correct amount of product to the water in the tank at the recommended dose rate.
- Add the remaining water to fill the tank to the required volume.
- Apply as a full cover film spray using conventional spray equipment.

## **IMPORTANT POINTS TO REMEMBER**

- Due to UV sensitivity it is recommended that *Bolldex*<sup>®</sup> is applied during the afternoon or evenings.
- *Bolldex*<sup>®</sup> is a suspension concentrate and the occlusion bodies should be kept in suspension.
- Mixed volumes must be applied as soon as possible and not left overnight or standing in the sun.
- *Bolldex*<sup>®</sup> does not impose any risk of residues in harvested crops. There is no withholding period after treatment with this biological insecticide and crops can be harvested or used at any stage after treatment.

## **NOTES REGARDING AERIAL APPLICATION**

### **PRECAUTIONS**

Aerial application of *Bolldex*<sup>®</sup> on row crops may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS 10118 (Aerial Application of Agricultural Remedies). It is important to ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria are met:

### **APPLICATION PARAMETERS**

- Volume: A volume of 30 L/ha is recommended. As *Bolldex*<sup>®</sup> has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy or be held responsible for any adverse effects if the product is applied aerially at a lower volume rate than recommended above.
- Droplet coverage: A droplet coverage of 25 - 35 droplets per cm<sup>2</sup> must be recovered at the target.
- Droplet size: A droplet spectrum with a VMD of 280 - 300 microns is recommended. Ensure that the production of fine droplets (less than 150 microns - high drift & evaporation potential) is restricted to a minimum.
- Flying height: The height of the spray boom should be maintained at 3 - 4 metres above the target. Do not spray when aircraft is in a climb, at the top or during a dive, or when banking.

## EQUIPMENT

- Use suitable atomising equipment (hydraulic nozzles or rotary atomisers) that will produce the desired droplet size and coverage but which will ensure the minimum loss of product either through endodrift (within target field) or exodrift (outside target field). The operator must use a setup that will produce a droplet spectrum with the lowest possible relative span.
- All nozzles / atomisers should be positioned within the inner 60% to 75% of the wingspan to prevent droplets from entering the wingtip vortices.

## METEOROLOGICAL CONDITIONS

- The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8°C. The addition of a suitable anti-evaporant is recommended if the VMD of the droplets is less than 200 - 250 microns.
- Stop spraying if the wind speed exceeds 15 km/h.
- Aerial application of **Bolldex**<sup>®</sup> must not be done under turbulent, unstable conditions during the heat of the day when rising thermals and downdraughts occur. Also note that the application of this product under temperature inversion conditions (spraying in or above the inversion layer) may lead to the following:

- Reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage).
- Damage to other sensitive crops and/or non-target areas through the movement of the suspended spray cloud away from the target field.
- Influence of rain on application:
- Should it rain within two hours after application, the application must be repeated.

**Obtain assurance from the aerial operator that the above requirements will be met.**

## REGISTERED USAGES

### Application Guidelines:

| Crop                            | Rates and Volume   | Remarks  |
|---------------------------------|--|--|
| All crops                       | Apply <b>200 ml/ha</b> in sufficient water to obtain proper coverage of target crop. | <ul style="list-style-type: none"><li>• 1st <b>Bolldex</b><sup>®</sup> application with first detection of bollworm eggs.</li><li>• 2nd <b>Bolldex</b><sup>®</sup> application 7-10 days after first application.</li><li>• Continue application of <b>Bolldex</b><sup>®</sup> every 7-10 days as long as bollworm is present</li></ul> <p><b>Application timing and intervals:</b><br/>Apply through conventional application systems as described in the mixing instructions. <b>Bolldex</b><sup>®</sup> should be applied as a full cover film spray.</p>   |
| Row crops<br>Aerial Application | Apply <b>100ml/ha</b> in sufficient water to obtain proper coverage of target crop   | <ul style="list-style-type: none"><li>• Apply with first detection of bollworm, eggs or small larvae.</li><li>• A single application should be sufficient to reduce the population to economically acceptable levels within 7-14 days.</li><li>• <b>Bolldex</b><sup>®</sup> does not have a residual effect. Repeat application if necessary.</li><li>• Preferably apply early morning or late afternoon.</li><li>• An appropriate wetter sticker should be added to the spray mix to improve crop coverage and adherence. Breakthru is recommended at 100 ml/Ha.</li></ul> <p><b>Application guidelines</b><br/>Apply through conventional aerial application systems as described in the directions for use.</p> |