

Delfin® WG

Reg. No. L9761, Act No. 36 of 1947

GROUP 11A INSECTICIDE

READ THE LABEL BEFORE USE
KEEP OUT OF REACH OF CHILDREN AND ANIMALS

Delfin® WG, a *Bacillus thuringiensis* subspecies *kurstaki* (Btk) flowable granule concentrate formulation for the suppression of various Lepidoptera larvae on crops as indicated.



SIGNAL WORD	GHS HAZARD STATEMENTS	GHS PRECAUTIONARY STATEMENTS
WARNING	CAUSES EYE IRRITATION	<ul style="list-style-type: none">Wear protective gloves/protective clothing/eye protection.In case of inadequate ventilation, wear respiratory protection.Avoid breathing dust, mist or spray.Wash hands and face thoroughly after handling. Do not touch eyes.

Active Ingredient: *Bacillus thuringiensis* subspecies *kurstaki* strain SA-11; solids, spores and lepidopteran active toxins. (Concentration 32 000 IU/mg).

Delfin®WG is a registered trademark of Certis USA LLC.

**Andermatt**
Madumbi

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BIO PEST MANAGEMENT

Net content:
30 Kg

Manufactured By:
Certis USA, L.L.C.
Suite 175, 9145 Guilford Rd.
Columbia MD 21046

Country of Origin: USA



Batch No.:
Date of Manufacture:
Expiry Date: 24 months from date of manufacture.
UN No.: Not relevant



WARNINGS

GHS Hazard Statement: Causes eye irritation.

PRECAUTIONS

GHS Precautionary Statements	
Wear protective gloves/protective clothing/eye protection.	IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical help.
In case of inadequate ventilation, wear respiratory protection.	Take off contaminated clothing and wash it before reuse.
Do not eat, drink, or smoke when using this product.	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Get emergency medical help immediately.
Wash hands and face thoroughly after handling. Do not touch eyes.	Contaminated work clothing should not be allowed out of the workplace.
Avoid breathing dust, mist or spray.	Dispose of the product in a responsible manner.
IF IN THE EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
If eye irritation persists: Get medical help.	

- Do not leave the product or mixture standing in the sun. Btk particles are sensitive to UV and prolonged exposure can result in reduced efficacy.
- Delfin® WG will not harm any beneficial organisms.
- 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 water used to rinse the equipment.
- Store in original container in a cool, dry place. Keep away from food and feed stuffs.
- Delfin® WG will remain viable for at least 24 months stored at room temperature.
- Use before expiry date indicated on label.
- Triple rinse empty container: Shake all the product out of the container into the spray or mixing tank. Hold container over the spray or mixing tank and rinse the container with running water for thirty seconds. Shake the rinse water into the mixing tank. Repeat the rinsing twice. Puncture the triple-rinsed container and dispose of via an Approved Collector or Recycler. Do not bury, burn or donate the container to any other parties who may use it as a receptacle for foodstuffs.

RELEVANT SUBSTANCES

Ingredient	CAS Number	%
<i>Bacillus thuringiensis</i> subspecies <i>kurstaki</i> strain SA-11	680338-71-1	85 (> 3.2 x 10 ⁹ IU /100 g)
Solid formulants	Confidential	15

FIRST AID

Eye contact: Most important acute symptoms/effects: eye irritation, redness, and/or excessive tears.

IF IN THE EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical help.

Skin contact: Most important acute symptoms/effects: skin irritation, redness may occur.

IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical help.

Inhalation: Most important acute symptoms/effects: irritation of the upper airway, coughing and shortness of breath may occur.

IF INHALED: Remove person to fresh air and keep comfortable, monitor breathing. Get medical help if the person feels unwell.

Ingestion: Most important acute symptoms/effects: no symptoms or effects are known.

IF SWALLOWED: Rinse mouth with water for several minutes. Get medical help if you feel unwell.

RESISTANCE WARNING STATEMENT

Delfin® WG is a Group 11A insecticide.

Resistance to the biological active *Bacillus thuringiensis* is reported and long term and continuous use of an individual product may result in the development of resistance within a population. To prevent resistance, it is advisable to use good agricultural practices of resistance management.

To delay insecticide resistance:

- Avoid exclusive repeated use of insecticides from the same insecticide group code. Alternate or tank mix with products from different insecticide group codes.
- Refer to individual product labels when alternating products or when using tank mixtures.
- Integrate other control methods (chemical, cultural, biological) into Integrated Pest Management programs.

MODE OF ACTION

Each Btk cell produces unique crystalline proteins known as Cry toxins. These toxins cause mortality when ingested by the larvae. Very specific gut enzymes, which only function in the alkaline conditions of the larval gut, dissolve the crystals to form the toxins. This disrupts the larva's digestive tract, causing the larva to stop feeding, and then die due to paralysis of the mid gut, osmotic shock, and septicaemia.

USE RESTRICTIONS

Delfin® WG does not impose any risk of residues on harvested crops.

COMPATIBILITY

Delfin® WG contains Btk particles and can be tank mixed with most pesticides and foliar feeds provided the tank mix pH is maintained between pH 5 and 8. A jar test of any combination is recommended prior to tank mixing to ensure physical compatibility. If you are uncertain, please contact Andermatt Madumbi (Pty) Ltd.

MIXING INSTRUCTIONS

- Fill spray tank with half the required water volume and start the agitator mechanism.
- Add any other spray material if necessary.
- Buffer the spray tank to a pH of 5 - 8.
- Add the correct amount of Delfin® WG to the tank at the recommended dose rate as indicated in the instructions, followed by the balance of required water volume.
- Apply as a full-cover film spray using conventional spray equipment. Good coverage is essential.
- Minimum water volume for ground application 150 L/ha.

IMPORTANT POINTS TO REMEMBER

- Due to UV sensitivity, it is recommended that Delfin® WG is applied during the late afternoon or evenings.
- Delfin® WG is a wettable granule formulation, and the Btk spores and crystals should be kept in suspension.
- Mixed volumes must be applied as soon as possible and not left overnight or standing in the sun.

REGISTERED USAGES

Crop/Disease	Dosage Rates	Remarks
Lettuce African bollworm (<i>Helicoverpa armigera</i>)	1 kg/ha	Application Timing and Intervals <ul style="list-style-type: none">First application with first detection of specified pest eggs.Second application 7 - 10 days after first application.
Tomato (<i>Tuta absoluta</i>)		<ul style="list-style-type: none">Continue application of Delfin® WG every 7 - 10 days as long as specified pest is present.
Citrus Citrus flower moth / Lemon borer (<i>Prays citri</i>)	250 - 500 g/ha	Application Timing and Intervals <ul style="list-style-type: none">First Delfin® WG application with first detection of specified pest eggs.Second Delfin® WG application 14 days after first application.Continue application of Delfin® WG every 14 days as long as specified pest is present.Delfin® WG should be applied preventatively or when the pest pressure is below the economic threshold.Delfin® WG is ideal for Integrated Pest Management.

Application Guidelines

Apply through conventional application equipment as described in the mixing instructions. Delfin® WG should be applied as a full cover film spray. Coverage of feeding areas essential.

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 methods, 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.