

CAUTION
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

DiPel® SC

BIOLOGICAL INSECTICIDE SUSPENSION CONCENTRATE

ACTIVE CONSTITUENT: *Bacillus thuringiensis* subsp *kurstaki* Strain ABTS-351
683 g/L LIQUID HYDROCARBONS

**For control of Lepidoptera pests on Cotton, Field crops and Forestry and Amenity Trees
as per the DIRECTIONS FOR USE table**

GENERAL INSTRUCTIONS

DiPel® SC contains live spores and endotoxin of a naturally occurring bacterium. This product is toxic only to caterpillars of certain Lepidopterous insects (moths and butterflies). It does not harm beneficial insects and mite predators and there are no harmful crop residues. The product does not kill immediately. Once a caterpillar eats treated foliage, it stops feeding, thus protecting the crop from further damage, but it may remain on the foliage before rotting and dropping to the ground, which normally occurs within 3-4 days.

INSECTICIDE RESISTANCE WARNING

GROUP 11A INSECTICIDE

For insecticide resistance management DiPel® SC is a Group 11A insecticide.

Some naturally occurring insect biotypes resistant to DiPel® SC and other Group 11A insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if DiPel® SC or other Group 11A insecticides are used repeatedly. The effectiveness of DiPel® SC on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Valent BioSciences and Sumitomo Chemical Australia accept no liability for any losses that may result from the failure of DiPel® SC to control resistant insects.

DiPel® SC may be subject to specific resistant management strategies. For further information contact your local supplier, Sumitomo Chemical Australia representative or local agricultural department agronomist.

MIXING

Ground and low-volume application: When combining DiPel® SC with other compatible products in spray tanks, ensure that tanks are first emptied of all insecticides and washed out thoroughly. Add water to the spray tank to the level which provides maximum agitation. Add a buffering agent when using water with a pH greater than 8.5. With the agitator running, add the DiPel® SC. Continue the agitation, add the other products and then the balance of water. Maintain the suspension whilst loading and spraying.

APPLICATION

As this product must be ingested, thorough spray coverage is essential. It is recommended that a non-ionic wetting agent at label rates be used for all crops. If rain falls shortly after treatment, re-treatment may be necessary. For best results time application to coincide with egg hatch and avoid day time spraying of DiPel® SC during hot weather. Repeat treatments as indicated by regular crop checking. To obtain maximum assistance from beneficial insects, avoid use of broad spectrum insecticides during a programme of the above sprays. Ensure label recommendations for any product mixed with DiPel® SC are followed when mixing with DiPel® SC.

Cotton/Field Crops:

Ground Application: Apply in a minimum of 100L/ha to ensure good coverage.

Aerial ULV Application: Apply in a minimum total volume of 3L/ha. If necessary, use Ampol D-C-Tron spray oil to make up to this volume. Use constant agitation when tank mixing.

Aerial Low Volume Application: Apply in a minimum of 30L/ha for low volume aerial application.

Amenity/Forestry (including Eucalypts):

Ground Application: Apply in a minimum of 500L/ha (preferably 750L/ha) to ensure good coverage.

Aerial Low Volume Application: Apply in a minimum of 50L/ha for low volume aerial application.

COMPATIBILITY

DiPel® SC is compatible with most insecticides and fungicides including most ULV formulations.

Any product formulated as an emulsifiable concentrate (EC) should only be used as an EC formulation not as a ULV when mixed with DiPel® SC.

DO NOT apply as a tank mix with or within 2 days of application of alkaline products such as cupric hydroxide (Kocide), foliar nutrients (except for flowable Zintrac and zinc sulphate), liquid fertilizers or Bordeaux mixture.

PRECAUTIONS

DO NOT use ULV product for ground (handheld or rig) application.

RE-ENTRY

DO NOT enter until the spray has dried. When prior entry is necessary, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), chemical resistant gloves and a disposable mist/fume mask. Clothing must be laundered after each day's use.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS

DO NOT contaminate ponds, waterways or drains with the product or used containers. The empty container must not be re-used for any other purposes.

STORAGE AND DISPOSAL

Store in the original container, tightly closed in a safe well-ventilated area as cool as possible. **DO NOT** expose to extremes of temperature or to direct sunlight.

Triple rinse containers before disposal. Add rinsings to spray tanks. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point.

If not recycling, break, crush or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. **DO NOT** burn empty containers or product.

SAFETY DIRECTIONS

Avoid contact with eyes and skin. **DO NOT** inhale vapour or spray mist.

When opening the container, preparing spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves and a disposable mist mask covering mouth and nose. When using the prepared spray wear cotton overalls buttoned to the neck and wrist, a washable hat and elbow-length PVC gloves.

After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves and contaminated clothing.

FIRST AID

First aid is not generally required. If in doubt, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. If swallowed, **DO NOT** induce vomiting.

SAFETY DATA SHEET

Additional information is listed in the Safety Data Sheet.

GHS additional statements:

May cause an allergic skin reaction.

Avoid release to the environment.

In case of contact with skin or eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection.

THIS PRODUCT IS NOT CONSIDERED TO BE A DANGEROUS GOOD UNDER THE AUSTRALIAN CODE FOR THE TRANSPORT OF DANGEROUS GOODS BY ROAD OR RAIL

In a Transport Emergency
Dial 000
Police or Fire Brigade

SPECIALIST ADVICE IN EMERGENCY ONLY ALL HOURS - AUSTRALIA WIDE
1800 033 111

IMPORTANT NOTICE

These goods are to be used only for the purpose and as specified on the label, and are not suitable for any other purpose. To the fullest extent permitted by law, we do not accept or bear any liability on any basis for any loss, damage, cost or expense, arising in any way, directly or indirectly, in connection with the goods.

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APVMA Approval No: 52835/145078

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DIRECTIONS FOR USE:

It is recommended that a non-ionic wetting agent at label rates be used for all crops.

CROP	PESTS	RATE	CRITICAL COMMENTS
Cotton	Bollworm (<i>Helicoverpa armigera</i>), Native Budworm (<i>H. punctigera</i>)	1 to 2 L/ha 3 L/ha	Pre-Squaring Cotton Apply DiPel® SC alone in pre-squaring cotton. Use the 1 L rate under egg pressure of up to 10 eggs/m and the 2 L rate under egg pressures of up to 20 eggs/m. Cotton – After Start of Squaring Apply with 1.5 to 2.0 L/ha D-C-Tron after start of squaring when egg pressures are less than 10 eggs/m and larvae are less than 8mm.
Pulse crops and oilseed crops including: Adzuki beans Canola Chickpeas Faba Beans Field Peas Lentils Linola Linseed Lucerne Lupins Mungbeans Navybeans Pigeon Peas Safflower Soybeans Sunflower Vetch Sorghum	Lepidopteran larvae susceptible to DiPel® including: Armyworm (<i>Spodoptera</i> spp.) Cotton bollworm (<i>Helicoverpa armigera</i>) Native budworm (<i>Helicoverpa punctigera</i>) Cabbage moth (<i>Plutella xylostella</i>) Cabbage white butterfly (<i>Pieris rapae</i>) Green looper (<i>Chrysodeixis eriosoma</i>) Pear looper (<i>Ectropis excursaria</i>) Soybean looper (<i>Thysanoplusia orichalcea</i>) Tobacco looper (<i>Chrysodeixis argentifera</i>)	2.0 – 3.0 L/ha (refer to Application section for water volumes)	DiPel® SC is a highly selective insecticide for use against caterpillars (larvae) of lepidopterous insects. Close scouting and early attention to infestations is highly recommended. Larvae must eat deposits of DiPel® SC to be affected. Close crop monitoring, timing of applications to the most susceptible pest life stage and thorough spray coverage of the crop are all essential to achieve an efficacious result. Important Note: Users should not expect high levels of efficacy where the optimum conditions (see below) for use are not possible. Users may need to consider alternative control methods where conditions are not optimal, or when pest pressure is high and where crops may be sensitive to damage. The suitability of DiPel® SC as a control measure for each crop should be determined through consultation with local industry advisers, company representatives or small scale tests before treatment of a large area or number of plants begins. CROP MONITORING: Crops must be monitored regularly for lepidopteran eggs or first instar larvae (small caterpillar stage) to ensure applications can be made at the correct time.
Amenity trees, Forestry including Eucalyptus	Above pests plus Autumn gum moth (<i>Mnesampela privata</i>)	2.0 – 2.5 L/ha (refer to Application section for water volumes)	APPLICATION TIMING: Time the commencement of spraying to coincide with egg hatch or treat FIRST instar larvae and before damage to the plant occurs. Applications to later instar larvae or mixed populations of first and later instars are unlikely to produce acceptable levels of control. As larvae must ingest DiPel® SC for it to be effective, application of DiPel® SC must be made before larvae move into areas where the spray does not reach (ie sheltered positions such as bolls, pods, deep canopy). Application to crops where fruiting structures or dense canopies are present is therefore also not recommended unless good coverage is still possible and some level of crop damage can be tolerated. The activity of DiPel® SC commences to decline immediately after application. Under continual pest pressure a minimum of 2 sprays separated by no more than 3 days initially, and then reapply at 3 – 5 day intervals as required is recommended. Spray late in the afternoon or early evening (before dew begins to settle) when larvae are actively feeding. Reapplication after rainfall or overhead irrigation may be necessary.

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CROP	PESTS	RATE	CRITICAL COMMENTS
Refer to previous page	Refer to previous page	Refer to previous page	<p>Continued from previous page</p> <p>SPRAY COVERAGE: Thorough spray coverage is needed to provide a uniform deposit of DiPel® SC at the site of larval feeding. Larvae must be actively feeding on treated, exposed plant parts. Ensure complete and thorough coverage of all plant surfaces. A non-ionic wetting agent such as Agral may need to be used on difficult to wet plants.</p> <p>APPLICATION RATES: Use the higher rates of DiPel® SC for higher egg laying activity, longer residual or larger first instar larvae. Higher rates should also be used against <i>Helicoverpa</i> spp. Control of <i>Helicoverpa</i> is most effective if larvae are less than 8 mm long. Control of <i>Spodoptera</i> is most effective if larvae are less than 15 mm long.</p> <p>GENERAL: Larval control is only achieved when the larvae ingest DiPel® SC and activation begins in the alkaline gut. Feeding ceases once the larvae ingest DiPel® SC and death of treated larvae may take up to 3-5 days. Under low temperatures, when larvae are less actively feeding, control may be slower. DiPel® SC is safe to beneficial arthropods and is best used in conjunction with these beneficial species (eg <i>Trichogramma</i> spp. parasitoids). To obtain maximum assistance from beneficial arthropods, avoid the use of broad spectrum insecticides before and during the use of DiPel® SC. DiPel® SC should be used in an Insecticide Resistance Management Strategy.</p>

NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.

WITHHOLDING PERIOD NOT REQUIRED WHEN USING DIPEL SC BIOLOGICAL INSECTICIDE ALONE.