

# DiPel®

BIOLOGICAL INSECTICIDE

Bt

GRAPES

DiPel® DF has been widely used for many years for grape production and continues to provide good cost effective control of lightbrown apple moth and grapevine moth.



Resistance management rotation option



No re-entry Interval



No WHP, no residues



Safe to all beneficial insects



Stops feeding immediately

## DiPel – Be Biorational



BIORATIONAL WINDOW

Bt

As a Biological Insecticide **DiPel® DF** not only presents as an ideal caterpillar control option but has a number of features specific to biological insecticides that make rational scientific and economic sense.







Lightbrown Apple Moth



Grapevine moth

BIO	RATIONAL
No impact on beneficials	Additional pest control through natural predators
No Withholding Period	Spray up to harvest
No residues	More markets
No re-entry interval	Keeps workers working
No restriction on the number of sprays	Can be used for on-going spray programmes
Non-scheduled, non-poisonous	Operator safety
Organic	Opens new high value markets

-  DiPel is highly effective against LBAM and Grapevine Moth.
-  Early season biorational window provides high efficacy against young instars and is safe to beneficials allowing natural predators to continue protecting crops.
-  Mid season, the biorational window provides strong resistance management benefits while offering no re-entry interval for workers.
-  Late season, DiPel can be used right up until harvest as it has no WHP and no residues.








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## Biorational Window

EARLY SEASON →	Inflorescences visible		<b>SAFE TO BENEFICIALS</b> DiPel DF is safe to all beneficial insects. Applying DiPel early in the season allows natural predators to continue to assist in controlling pest populations.
	Inflorescences fully developed		<b>STOPS FEEDING IMMEDIATELY</b> DiPel DF causes insects to stop feeding immediately meaning no further damage to vines. During the early season pest populations are in their early stages. Young instars are concentrated and relatively immobile which is when DiPel is especially effective.
	Full flowering		
MID SEASON →	End of flowering		<b>RESISTANCE MANAGEMENT</b> Many recent chemistry introductions to the market, whilst offering good benefits, belong to the same mode of action group. Resistance management is all about rotating chemistries and DiPel offers a different mode of action and a great option in the spraying program.
	Berries pea-sized		<b>ENVIRONMENTAL SAFETY</b> Sustainability is a key watchword for growers, shippers, and marketers of high quality produce. DiPel is highly specific and that translates into low-impact products. DiPel has no re-entry interval, no WHP and is a non-scheduled, non-poisonous product. As an Australian Organic Registered Farm Input DiPel can assist growers in opening new high value markets and is a perfect solution for sustainability-minded growers.
	Bunch closure		
LATE SEASON	Beginning of ripening		<b>HARVEST MANAGEMENT</b> An entire season's worth of time and investment comes down to maintaining quality at harvest time. DiPel can be used right up until harvest providing growers with an effective tool at a critical stage of production and granting flexibility without sacrificing quality.
	Softening of berries		<b>RESIDUE MANAGEMENT</b> DiPel is a premier management tool for grape growers. Exempt from residue tolerance, use of Bt for late season applications is a critical part of the production cycle whenever Maximum Residue Limits are an issue. DiPel provides effective control while helping growers and brokers avoid crop rejection problems with buyers.
	Berries ripe for harvest		

## Getting the Best from DiPel DF on Grapes

- Careful monitoring and understanding of pests and beneficial insects is essential. Use traps to monitor lightbrown apple moth (LBAM) flights. Look for egg masses on the upper surfaces of leaves, and caterpillars on shoots. Monitor at least weekly.
- Spraying should occur when caterpillars have just hatched and are feeding on exposed leaves. This is generally within 2 weeks of the 1st LBAM egg masses being found.
- Since continual monitoring is difficult and generations may overlap, many growers spray DiPel DF with a cover spray program every 2 weeks during the high pressure periods.
- Always target small caterpillars <8 mm.
- Make sure the water pH is less than 8. If the water used has a high pH it may activate the toxins prematurely in the spray mixture and reduce efficacy.
- Use a high water rate to get good coverage.
- Use a wetting agent or spreader/sticker at label rates.
- Spray after 4 pm if possible to reduce the effect of UV breakdown. Good results are obtained by table grape growers spraying at night in a mix with ProGibb®.
- Avoid rain or overhead irrigation for 24 hours after spraying.
- Feeding attractants may help Bts but good coverage at the correct rate of Bt is critical.
- If pest pressure is moderate and beneficials are present in good numbers use DiPel DF and keep the beneficials working to assist you.
- If other products are used in the spray program use products that have a low effect on beneficials.

# Bt

## Cost Effective Control

Because of the relatively low cost of DiPel DF, growers can afford to spray proactively for LBAM at a lower cost than a couple of targeted sprays of the newer chemistries. This not only helps manage costs but also saves time in continues spray threshold monitoring.

### WINE GRAPES

Experience shows that when used with a cover spray program every 14 days, lower rates give satisfactory results. This is because the larvae will always be small when sprayed.

With a cover spray program the following rates have been found to give good results:

- Early season at 35 g DiPel DF/100 L in about 800 L/ha of water
- Late season at 25 g DiPel DF/100 L in about 1500 L/ha of water

If used as a knockdown spray, once an infestation is discovered, higher rates will be required. For wine grapes only a Bt like DiPel DF can be used right through to harvest.

### TABLE GRAPES

With a cover spray program the following rates have been found to give good results:

- Early season at 25 g DiPel DF/100 L in about 1500 L/ha of water
- Late season at 25 g DiPel DF/100 L in about 2500 L/ha of water

Because of low tolerance of berry damage and LBAM being a quarantine pest in some countries, at bunch closure it may be necessary to use a product with more fumigant activity so that it penetrates the bunch to kill caterpillars that the spray cannot reach.

## Quality Formulations

DiPel comes from the company that has more experience with Bt insecticides than anyone else. This experience has led to continuous innovation in fermentation, formulation and application technology allowing the products to maintain their effectiveness in today's tough insect control environment.

The combination of experience and innovations means that the DiPel formulation is unequalled in terms of:

- Bioactivity
- Rainfastness
- Consistency of formulation
- Ease of application

Scan this QR code for more information about DiPel DF:



For further information contact:



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