

POISON

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



Bifenthrin 100EC

Insecticide/Miticide

ACTIVE CONSTITUENT: 100 g/L BIFENTHRIN

SOLVENT: 763 g/L HYDROCARBON LIQUID

GROUP

3A

INSECTICIDE

For the control of *Helicoverpa* spp. in cotton, tomatoes, lucerne seed crops, navy beans; certain species of mites in bananas, cotton and tomatoes; longtailed mealy bug in pears; banana weevil borer and banana rust thrips in bananas; mirids in cotton; whitefly in tomatoes; redlegged earth mite, blue oat mite, bryobia mite, webworm and brown pasture looper in faba beans, subterranean clover, clover, canola, wheat, barley, field peas, lupins and lucerne; and certain species of wireworms in cotton and sugarcane; fig longicorn in grapes and citrus leafeating weevil in citrus as per the Directions for Use.

IMPORTANT: READ THE ATTACHED LEAFLET BEFORE USE

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Contents: 5L, 10L, 20L

Directions for use

RESTRAINTS

DO NOT use as a foliar spray in banana plantations and orchards where mite predators and other beneficials are established and providing effective mite control and/or other pest control.

DO NOT apply as foliar treatment if rainfall is expected before spray deposits dry on leaf surfaces.

DO NOT apply to bananas by aircraft

CROP	PEST	STATE	RATE	WHP	CRITICAL COMMENTS
Bananas	Banana weevil borer (<i>Cosmopolites sordidus</i>) Banana rust thrips (<i>Chaetanaphothrips signipennis</i>)	QLD, NSW, WA, NT only	Seasonal Program <u>Stool Treatment Method</u> 250-330mL/100L twice per year OR 660mL/100L Once per year <u>Band Treatment Method</u> 250 mL/100L twice per year Monitoring Program <u>Stool Treatment Method</u> 330 mL/100L <u>Band Treatment Method</u> 250 mL/100L	1 day	Seasonal Program Twice per year timing Apply in October/November (spring/early summer) and March/April (late summer/autumn). Use the higher rate (concentration) when borer pressure or damage is high. Once per year Timing Apply in October/November OR March/April Monitoring Program Monitor weevil borer populations carefully by trap counts and/or corn damage ratings, beginning in September when pest activity is on the increase and continue until April. Apply treatment when banana weevil borers reach or exceed acceptable threshold levels. Monitor borer control after application and re-treat as required. Banana Weevil borer: Application should be made after rain or irrigation during periods of high adult borer activity. Banana rust thrips: Application against banana weevil borer will give coincident rust thrips control, particularly when application is made when thrips activity is on the increase usually beginning September and into the summer months. Application Method <u>Stool Treatment Application</u> Remove trash from the base of stools and apply 500 – 700 mL of spray solution to each stool, depending on stool size. Treat the bottom 30cm of each stool as well as the soil in a 30cm band around each stool, ensuring thorough treatment of both butt(s) and follower(s). Use the lower spray volume of 500mL on small stools less than 50cm across the entire base. <u>Band Treatment Application</u> Apply as a band application with a side delivery boom and offset nozzles on both sides of the row with the spray pattern positioned to spray 30cm of soil on either side of the row and 30cm in height. Aim to apply a total spray volume of 1L/stool area. For single sucker row configurations apply 28L of solution per 100 meters of row in a band 0.5m wide on each side of the row overlapping in the centre. For double sucker configurations apply 56L of solution per 100 metres of row in a band 1m wide on each side of the double row with the spray pattern overlapping between the rows.
Bananas (continued)	Strawberry spider mite (<i>Tetranychus lambi</i>)	QLD & WA only	40mL/100L	8 days	Monitor mite population on old leaves particularly during hot dry conditions. Apply Sabakem Bifenthrin 100EC Insecticide/Miticide as a preventative rather than a curative treatment before damage occurs, and before mite numbers build up to damaging levels. Follow up applications may be required at 10 to 14 day intervals. Thorough coverage of the lower leaf surface is essential to ensure good control. Use a total spray volume of 300-500L/ha.
Cotton	Native budworm (<i>Helicoverpa punctigera</i>) Cotton bollworm (<i>Helicoverpa armigera</i>) Two spotted mite (<i>Tetranychus urticae</i>) Green mirid (<i>Creontiades dilutus</i>) Apple dimpling bug (<i>Campylomma liebknechti</i>)	QLD, NSW, WA only	600-800mL/ha	14days	Apply as indicated by field checks. Use the higher rate when pest pressure is high, conditions favour pest development and when increased residual protection is required. Budworm and Bollworm: Applications should be timed to coincide with egg hatch and when small larvae up to 5 mm are present. Do not apply this product to <i>Helicoverpa</i> (= <i>Heliothis</i>) <i>armigera</i> larvae larger than 5 mm in length. Two spotted mite: Applications against <i>Helicoverpa</i> spp will give good control of coincident two spotted mite, particularly when applied on low mite populations (around 10% leaf infestation). If conditions continue to favour mite development a second application may be required 14-20 days later. Green mirid & Apple dimpling bug: Apply at recommended threshold levels as indicated by field checks. Use the higher rate for increased pest pressure and longer residual protection.
	False wireworm (<i>Pterohlaeus alternatus</i>) Sugarcane wireworm (<i>Arypnus variabilis</i>)		375mL/ha ¹ or 3.8mL/100m of row		Wireworms: Apply as a spray into the furrow at planting. Use a spray nozzle which will deliver a coarse spray in a total volume of 60-100 L/ha in a 10 cm band over the seed before soil is brought in behind covering tyres in front of the press wheel. ¹ The rate is based on a 1m row spacing. If row spacing varies from 1m then apply at the use rate according to mL/100m of row

CROP	PEST	STATE	RATE	WHP	CRITICAL COMMENTS
Canola Faba beans, Subterranean clover, Clover, Barley, Field Peas, Lupins, Lucerne & Wheat	Redlegged Earth Mite (<i>Halotydeus destructor</i>) Brown pasture looper (<i>Ciampa arietaria</i>)	All states	50-100 mL/ha	4 weeks (grazing)	Apply as a broadcast ground rig application in a total water volume of 50-200L/ha or by air in a minimum total water volume of 20 L/ha. Apply to bare soil after conventional cultivation and sowing or onto well grazed or sprayed pasture after direct drilling. Treat infested paddocks after sowing and before or soon after seedling emergence. Use the higher rate on heavier infestations and for longer residual protection. Sabakem Bifenthrin 100EC Insecticide/Miticide is compatible with some herbicides. See compatibility statement for details.
	Blue oat mite (<i>Penthaleus major</i>) Pasture webworm (<i>Hednota</i> spp.)		100mL/ha		
	Bryobia mites (<i>Bryobia</i> spp.)		200mL/ha		
Canola	Vegetable weevil (<i>Listroderes difficilis</i>)	All states	100 -200mL/ha	-	Use the 100mL rate when pest pressure is low. Monitor adjacent habitat and edges of the field for the presence of vegetable weevil prior to making a decision whether to spray.
Peaches Nectarines, Plums, Apricots	Carpophilus beetles (<i>Carpophilus</i> spp)	All states	Dilute spraying 50mL/100L Concentrate spraying Refer to the mixing/ application section	1 day	Monitor stone fruit orchards for Carpophilus beetle as fruit approach maturity and becomes susceptible to attack. Apply Sabakem Bifenthrin 100EC Insecticide/Miticide as a dilute spray before beetles reach damaging levels. Apply to the foliage and fruit of trees. Continue to monitor beetle numbers and if necessary reapply Sabakem Bifenthrin 100EC Insecticide/Miticide up to 1 day before harvest or use another insecticide registered for this purpose. Apply no more than 2 applications for season. There must be a minimum of 10 days between re-treatment and the initial application. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods. Do not use at rates greater than 100mL per 100L water when using concentrate spraying. Cultural methods (eg destruction of fallen fruit by mulching) should be used to prevent excessive build up of Carpophilus beetle.
Citrus	Leafeating weevil (<i>Eutinophaea bicristata</i>)	All states	Pre-emergence program 12.5 or 25mL/tree Post-emergence monitoring program 6mL/tree	-	Apply as a high volume band application in a 1.5 to 2 metres wide swath, to the ground, sides of the row, under each tree. Aim to apply a total spray volume of 5 to 10 L/tree (eg at 250 trees/ha = 1250 to 2500L/ha). Pre-emergence program: Apply just prior to, or at the first sign of major beetle emergence in mid-October. Use the higher rate in blocks with a history of high beetle numbers or when longer residual control is required. Post-emergence monitoring program: Apply at peak beetle emergence in October/ November as indicated by field monitoring. (Refer to monitoring statement on label). Follow up treatment may be necessary based on a threshold of 25 beetles per 10 sites per orchard in consecutive counts 1-2 weeks apart.
Grapes	Fig longicorn (<i>Acalolepta vastator</i>)	NSW, ACT & WA only	1000mL/100L	-	The application MUST be made at late dormancy after pruning and before bud burst. Apply a single high volume spray, with nozzles directing the spray solution to the trunk and cordons (arms) of grape vines to achieve thorough wetting of the bark. Total spray volume should be about 500mL/vine achieved by hand application.
Lucerne seed crops	Native budworm (<i>Helicoverpa punctigera</i>)	All states	400-600mL/ha	-	Do not treat lucerne seed crops for alfalfa sprout production. Apply as indicated by field checks after the commencement of flowering. Use the higher rate when pest pressure is high, conditions favour pest development and when increased residual protection is required. Native Budworm: Applications should be timed to coincide with egg hatch and when small larvae up to 5mm are present.
Navy beans	Native budworm (<i>Helicoverpa punctigera</i>) Corn earworm (<i>Helicoverpa armigera</i>)	All states	600-800mL/ha	14 days (harvest and grazing).	Apply as indicated by field checks from flowering onwards. Use the higher rate when pest pressure is high, conditions favour pest development and when increased residual protection is required. Budworm and Earworm: Applications should be timed to coincide with egg hatch and when small larvae up to 5mm are present. Do not apply this product to <i>Helicoverpa</i> (= <i>Heliothis</i>) <i>armigera</i> larvae larger than 5mm in length
Pears	Longtailed mealybug (<i>Pseudococcus longispinus</i>)	VIC & WA only	25mL/100L plus Caltex DC Tron at 1L/100L	14 days	Examine wood for the presence of over wintering longtailed mealy bugs but do not spray until larger numbers of young nymphs emerge in spring. Apply this mixture to near the point of runoff to all above ground parts of the tree between green tip to commencement of flowering. Do not spray after flowering has commenced.
Sugarcane	Sugarcane wireworm (<i>Agrypnus</i> spp.)	QLD, NSW & WA only	375mL/ha* or 5.6mL/100m of row	-	Apply as a spray into the furrow at planting. Use a spray nozzle which will deliver a coarse spray in a total volume of 60-100L/ha in a band 20-30cm wide over the base of the furrow on top of the setts and before covering soil is brought in by tynes. *The rate is based on a 1.5m row spacing. If row spacing varies from 1.5m then apply at the use rate according to mL/100m of row.

CROP	PEST	STATE	RATE	WHP	CRITICAL COMMENTS
Tomatoes	Native budworm, (<i>Helicoverpa punctigera</i>) Corn earworm (<i>Helicoverpa armigera</i>) Two spotted mite (<i>Tetranychus urticae</i>) Tomato russet mite (<i>Aculops lycopersici</i>)	All states	High Volume 40-60mL/100L or Low Volume 600mL/ha	1 day	Do not use low volume ground or air application on trellis tomatoes. Crop Monitoring Program <i>Helicoverpa</i> spp: Apply as indicated by field checks. Applications should be timed to coincide with egg hatch and when small larvae up to 5mm are present. Do not apply this product to <i>Helicoverpa</i> (= <i>Heliothis</i>) <i>armigera</i> larvae larger than 5mm in length. Mites: Applications against <i>Helicoverpa</i> spp will give good control of coincident mites, particularly when applied on low mite populations. If conditions continue to favour mite development, a second application may be required 14-20 days later. Schedule Spray Program If fields are not checked during pest infestation periods, apply on a 7-10 day alternating program with a non pyrethroid insecticide. Use the higher rate (high volume application) and shorter interval when pest infestation is more severe and when increased residual protection is required. Do not apply this product to <i>Helicoverpa armigera</i> larvae larger than 5mm in length.
	<i>Whitefly</i> (<i>Trialeurodes vaporariorum</i>)		30mL/100L water		

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

WITHHOLDING PERIODS:

BANANAS

**For Ground Applications – DO NOT HARVEST FOR 1 DAY AFTER APPLICATION
For Foliar Applications – DO NOT HARVEST FOR 8 DAYS AFTER APPLICATION.**

COTTON:

**DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION
DO NOT GRAZE OR CUT FOR STOCKFEED. DO NOT FEED COTTON TRASH TO LIVESTOCK.**

PEARS:

DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION

NAVY BEANS APPLICATION:

DO NOT HARVEST, GRAZE OR CUT FOR STOCK FOOD FOR 14 DAYS AFTER APPLICATION

TOMATOES:

DO NOT HARVEST FOR 1 DAY AFTER APPLICATION

**SUBTERRANEAN CLOVER, CLOVER,
FIELD PEAS, FABA BEANS, WHEAT**

BARLEY, LUCERNE, CANOLA, AND LUPINS:

**DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 4 WEEKS AFTER APPLICATION
NOT REQUIRED WHEN USED AS DIRECTED**

CITRUS, GRAPES, SUGARCANE:

GENERAL INSTRUCTIONS

Sabakem Bifenthrin 100EC Insecticide/Miticide is a contact and residual insecticide/miticide. It can be used as a protective treatment when applied at regular intervals or as a knockdown treatment to control existing pests. Best results are obtained when Sabakem Bifenthrin 100EC Insecticide/Miticide is applied before pest populations build up to damaging levels.

This product is not suitable for use in Integrated Pest Management (IPM) programs where mite or other insect predators or parasites are established and providing effective mite and other insect control.

APPLICATION

Sabakem Bifenthrin 100EC Insecticide/Miticide may be applied by either ground rig or aircraft. Thorough coverage is essential to ensure adequate control. Do not apply as a fog or mist.

Dilute Spraying:

- Use a sprayer designed to apply high volumes of water up to the point of run-off
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy. Apply sufficient water to cover the crop to point of run-off. Avoid excessive run-off.
- The required water volume may be determined by applying different test volumes, using different settings on the sprayer, from industry guidelines or expert advice.
- Add the amount of product specified in the Directions for Use table for each 100L of water. Spray to the point of run-off.
- The required dilute spray volume will change and the sprayer set up and operation may also need to be changed, as the crop grows.

Concentrate spraying:

- Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies water volumes less than those required to reach the point of run-off) and matched to the crop being sprayed.
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy using your chosen water volume.
- Determine an appropriate dilute spray (see dilute spraying above) for the crop canopy. This is needed to calculate the concentrate mixing rate.
- The mixing rate for concentrate spraying can then be calculated in the following way:

EXAMPLE ONLY:

- Dilute spray volume as determined above: For example 1000L/ha
- Your chosen concentrate spray volume: For example 500L/ha
- The concentration factor in this example is: $2 \times$ (ie $1000L \div 500L = 2$)
- If the dilute label rate is 50mL/100L, then the concentrate rate becomes 2×50 , that is 100mL/100L of concentrate spray.

- The chosen spray volume, amount of product per 100L of water, and the sprayer set up and operation may need to be changed as the crop grows.
- For further information on concentrate spraying, users are advised to consult the relevant industry guidelines, undertake appropriate competency training and follow industry Best Practices.

Ground Application: Applications should be made as a fine spray preferably using hollow cone nozzles and a droplet size of 150 to 200 microns. The application volume will depend on the type of crop to be treated. The following are suggested:

Low volume broadcast application to – e.g. cereals, canola, grain legumes, lucerne, subterranean clover: 50-200L/ha.

Low volume row crops applications to cotton, tomatoes, navy beans: 50-200L/ha.

High volume applications to row crops – e.g. trellised tomatoes: 200 – 1000 L/ha except as noted in critical comments. Use 200 L/ha from transplanting increasing to 1000 L/ha at maturity.

High volume directed spray:

Grapes: Apply by hand application, using a high volume coarse spray of 500mL/vine. (e.g. at approx. 2500 vines/ha = 1250L/ha).

Foliar sprays to bananas: 300 to 500 L/ha

High volume application to stone fruit: 1000 to 2000L/ha

Soil Applied Sprays:

High volume application

Bananas:

Stool treatment: Apply as a coarse spray at 500-750 mL per stool.

Band treatment: Apply as a band application with a side delivery boom and offset nozzles – 1L of spray solution per stool.

Citrus: Apply as a high volume, directed spray to the ground under each tree. For optimum control apply to both sides of the tree.

Total spray volume should be 5 to 10 L/tree (e.g. at 250 trees/ha = 1250 to 2500L/ha).

In furrow applications:

Cotton & Sugarcane: Use a coarse spray: 60 to 100 L/ha as a band over the seed or sett before covering with soil – refer to critical comments for details.

Aerial Application:

Use at least 20 L/ha of total spray volume. Spray during the cooler parts of the day or night. To reduce possibility of drift, avoid spraying in calm conditions or when wind is light and variable. Preferably, spray in a crosswind. Use suitable application equipment and/or nozzles to deliver a fine spray with a droplet size of 150 to 200 microns.

A spray drift minimisation strategy should be employed at all times when aerially applying sprays to, or near, sensitive areas. The strategy envisaged is best exemplified by the cotton industry's Best Management Practice manual.

MONITORING

Post-emergence monitoring of Citrus leaf eating weevil populations: At first sign of major beetle emergence in mid October commence monitoring at 1 to 2 week intervals. Place polystyrene fruit box (330 x 480mm) under tree, shake branches vigorously, repeat on ten randomly selected trees throughout orchard. If 25 beetles or more are recorded in consecutive counts, treatment is required.

MIXING

Add the required quantity of Sabakem Bifenthrin 100EC Insecticide/Miticide to water in the spray tank and mix thoroughly. Maintain agitation during mixing and application.

COMPATIBILITY

Sabakem Bifenthrin 100EC Insecticide/Miticide is compatible with commonly used fungicides such as Dithane, Antracol, Chlorothalonil 500 and the herbicides –Sprayseed, Broadstrike, Spinnaker, Sabakem Simazine 900WG, Metribuzin, Chlorsulfuron, Triasulfuron and Sabakem Pendimethalin 333EC.

SURFACTANTS

Sabakem Bifenthrin 100EC Insecticide/Miticide contains a surfactant. Additional surfactant may only be necessary on hard to wet plants and in high volume situations.

NOTICE

Helicoverpa (= Heliothis) armigera resistance in Northern NSW and Qld. To help contain pyrethroid resistance in *H. armigera*, the Summer Crop Insecticide Strategy as developed by the Qld Department of Primary Industries and NSW Agriculture should be adhered to. Failure to observe the strategy may result in widespread resistance affecting the future viability of summer cropping.

RESISTANCE WARNING

GROUP	3A	INSECTICIDE
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For insecticide resistance management Sabakem Bifenthrin 100EC Insecticide/Miticide is a Group 3A insecticide. Some naturally occurring insect biotypes resistant to Sabakem Bifenthrin 100EC Insecticide/Miticide and other Group 3A insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Sabakem Bifenthrin 100EC Insecticide/Miticide or other Group 3A insecticides are used repeatedly. The effectiveness of Sabakem Bifenthrin 100EC Insecticide/Miticide on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Sabakem Pty Ltd. accepts no liability for any losses that may result from the failure of Sabakem Bifenthrin 100EC Insecticide/Miticide to control resistant insects.

Sabakem Bifenthrin 100EC Insecticide/Miticide may be subject to specific resistance management strategies. For further information contact your local supplier, Sabakem representative or local agricultural department agronomist.

STONE FRUIT EXPORT ADVICE

Export or Treated Stone Fruit – some export markets do not have suitable Maximum residue Limits or import tolerance in place. Please contact Sabakem or the Australian Fresh Stone Fruit Growers Association prior to using this product on fruit destined for export.

RE-ENTRY TO TREATED FIELDS/CROPS

Do not re-enter treated field/crop until spray deposits have dried, unless wearing suitable protective clothing (i.e. waterproof hat, overalls, boots and gloves).

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Dangerous to fish and aquatic organisms. Do not contaminate dams, rivers, streams, waterways or drains with this product or the used container. Tail drains which flow from treated areas should be prevented from entering the river systems.

PROTECTION OF LIVESTOCK

Dangerous to bees. DO NOT spray any plants in flower when bees are foraging. Spray in the early morning when bees are not actively foraging.

STORAGE AND DISPOSAL

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Triple or preferably pressure rinse containers before disposal or recycling. Add rinsings to spray tank. 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 bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of water ways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

SAFETY DIRECTIONS

Poisonous if swallowed. Attacks eyes. Will irritate the skin. Avoid contact with eyes and skin. Do not inhale spray mist. When preparing spray, wear cotton overalls buttoned to the neck and wrist and washable hat, elbow-length PVC gloves and goggles. When using the prepared spray wear cotton overalls buttoned to the neck and wrist and washable hat and elbow length PVC gloves. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves, goggles and contaminated clothing.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. (PHONE AUSTRALIA: 13 11 26). If swallowed, do NOT induce vomiting. Give a glass of water.

MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet, which is available from the supplier.

CONDITIONS OF SALE

The use of this product is beyond the control of Sabakem Pty Ltd. No warranty is expressed or implied regarding the suitability or efficiency for any purpose for which it is used by the buyer. Sabakem Pty Ltd accepts no responsibility for any consequences resulting from the use of this product. Sabakem Pty Ltd will not be held liable for any loss, injury or damage arising from the sale, supply or use of this product, whether through negligence or otherwise. No responsibility will be accepted for any consequences whatsoever resulting from the use of this product.

**For specialist advice in an emergency dial
1 800 638 556
24 hours Australia wide.**

APVMA Approval No: 67468/56104

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