GROUP 5 INSECTICIDE

MINDER

INSECTICIDE

I

For the control of certain insect pests in a range of crops.
See detailed label text for specific crop approval information.

TOP FRUIT, BRASSICAS, BULB/SALAD ONIONS, LEEKS, GARLIC, SHALLOT, STRAWBERRIES

MAPP 21147

480g/l Spinosad
Suspension Concentrate

NET CONTENTS:
1L

FOR USE ONLY AS A PROFESSIONAL INSECTICIDE

lifescientific
FIRST TO MARKET

MINDER – MAPP 21147 - Contains spinosad 480 g/l formulated as a suspension concentrate (SC).
MINDER is an insecticide for selective use in apples, pears, crab apples, quinces, broccoli, Brussels sprouts, cabbage, calabrese, cauliflower, Oriental cabbage, leeks, bulb onions, salad onions, garlic, shallots and strawberries.

WARNING

VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS
Keep out of reach of children.
Collect spillage.
Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.
Contains 1,2 benzisothiazolin-3-one, may produce an allergic reaction.
To avoid risks to human health and the environment comply with the instructions for use.
Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).

Important Information - FOR USE ONLY AS A PROFESSIONAL INSECTICIDE

Crops	Maximum individual dose (mL product per hectare)	Maximum number of treatments (per crop)	Latest time of application
Apples, pears, crab apples, quinces Pre-blossom applications	150 mL/ha	1	7 days before harvest
Apples, pears, crab apples, quinces Post-blossom applications	250 mL/ha	3	-
Module plants of brassica crops (broccoli, Brussels sprout, cabbage, calabrese, cauliflower, Oriental cabbage) for outdoor planting	12 mL/1000 plants	1	Pre-planting, 6 leaf stage
Broccoli, Brussels sprout, cabbage, calabrese, cauliflower, Oriental cabbage	200 mL/ha	4	3 days before harvest
Leeks, bulb onions, salad onions, garlic, shallot	200 mL/ha	3	7 days before harvest
Protected strawberries	150 mL/ha (15mL/hL water)	3	1 day before harvest

For protected strawberries apply no more than 2 consecutive sprays followed by a minimum 28-day interval before the third application. Only two further applications to brassica crops may be made if the pre-planting application is made. Module drench applications must not be made using hand-held equipment.
No more than 6 applications should be made in any protected situation in a 12-month period, regardless of the crop being treated (including ornamentals).
READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

APPROVAL HOLDER AND MARKETING COMPANY: Life Scientific Ltd, Block 4, Belfield Office Park, Beech Hill Road, Dublin 4, Ireland.
Tel: +353 2832024
The Control of Substances Hazardous to Health Regulations (COSHH) may apply to the use of this product at work.
FOR 24 HOUR EMERGENCY INFORMATION CONTACT NHS 111

PROTECT FROM FROST

SHAKE WELL BEFORE USE **BATCH NO. SEE PACKAGING**

SHAKE WELL

PEEL BACK FOR DIRECTIONS FOR USE LEAFLET

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SAFETY PRECAUTIONS

Operator protection

- ENGINEERING CONTROL OF OPERATOR EXPOSURE must be used where reasonably practicable in addition to the following protective equipment.
- Wash concentrate from skin or eyes immediately: When using do not eat, drink or smoke.
- Wear suitable protective clothing (coveralls) and suitable protective gloves.
- Wash hands and exposed skin before eating and drinking and after work.

Environmental protection

- DO NOT CONTAMINATE SURFACE WATERS OR DITCHES with chemical or used container.
- DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 metres of the top of the bank of a static or flowing water body, unless a Local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 metre from the top of a ditch which is dry at the time of application.
- Do not allow direct spray from broadcast air-assisted sprayers to fall within 40m of the top of the bank of a static or flowing waterbody, unless a Local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 5m of the top of a ditch which is dry at the time of application. Aim spray away from water.
- Do not reuse container for any purpose.
- Use appropriate containment to avoid environmental contamination.

Storage and disposal

- KEEP OUT OF REACH OF CHILDREN.
- KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS
- Wash out container thoroughly, empty washings into spray tank and dispose of safely.
- This material (and its container) must be disposed of in a safe way.

RESISTANCE MANAGEMENT STRATEGY

General points

- Spinosad is in the Insecticide Resistance Action Committee Group 5, a unique mode of action which needs to be protected to allow its use in the future.
- Use the product in planned programmes with other insecticides with different modes of action.
- Do not use multiple applications of the product on consecutive pest generations; multiple applications to a single generation are permissible. If the number of pest generations is unclear, use no more than two consecutive applications, and do not use for more than 30 days. Do not use MINDER on consecutive generations of pests known to be at high risk of the development of resistance, e.g. thrip species.
- Use no more than six applications per year in any protected crop situation, regardless of the crop sprayed.
- Do not use reduced rates, whether applied alone or in tank-mix.
- Pest monitoring is vital. The product works best against early developmental stages of the pest species.
- Use MINDER in programmes with products using other effective modes of action.
- If possible, use an Integrated Pest Management (IPM) programme which includes other means of pest control, such as cultural or biological control methods. MINDER is compatible with IPM programmes.

Specific restrictions, outdoor crops

- For control of caterpillars in top fruit apply at egg hatch.
- In all other crops apply when pests are first seen. Repeat the application at a ten-day interval only if pest monitoring shows this to be necessary.
- The product must be applied before the pests are well established in the crop. If thrips are already present in high numbers, it may be necessary to apply a product with knock-down activity prior to an application of MINDER.
- Onion thrips are known to be at high risk of the development of resistance to insecticides. Resistance to spinosad has been observed in the field. Where resistance is confirmed, MINDER is unlikely to give satisfactory control.

Specific restrictions, protected strawberry crops

- Before planning the spray programme, it needs to be established if any incoming plant material has already been treated with spinosad.
- Spray when Western flower thrips are first seen, with a repeat application at a 7-day interval if necessary. Leave at least 28 days between sets of two applications. This restriction applies to all plants in the structure, even if not all plants have been treated.
- Western flower thrips are known to be at high risk of the development of resistance to insecticides. Resistance to spinosad has been observed in the field. Where resistance is confirmed, MINDER is unlikely to give satisfactory control.

Specific restrictions, subsequent cropping

- No more than six applications of spinosad may be made in any protected crop structure in any 12 month period, regardless of the crop treated. This includes the treatment of ornamental (non-food) crops.
- If the last insecticide spray in a previous crop included spinosad, an alternative mode of action should be used for the first spray in a subsequent crop.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

Spinosad is a selective translaminar insecticide. MINDER is a product that effectively controls a range of insect pests in named crops. The product works by direct application to the pest, or when the pest touches the product on a leaf, or when the pest feeds on a treated plant part.

Application

Control of tortrix and codling moths in top fruit (apples, pears, crab apples and quinces)

For control of over-wintered tortrix moths apply 150mL/ha of MINDER in 300-1500L/ha of water. One application should be made from early green cluster when the first signs of larvae spinning webs are observed.

Control of summer fruit tortrix moths and codling moths requires effective monitoring of pest populations using pheromone traps. Once the threshold is observed apply post-blossom at first egg hatch, using 250mL/ha of MINDER in 300-1500L/ha of water, with a total of up to three applications per year at 10-day intervals.

Control of cabbage root fly in outdoor brassica crops (broccoli, Brussels sprouts, cabbage, calabrese, cauliflower, Oriental cabbage)

Modular drench treatment

It is important to prevent the leaching of spinosad into soil, either in the greenhouse or the field. Management of the total amount of water applied is key to this process. Ensure that the total amount of water used in this process does not exceed the carrying capacity of the modules. Only healthy plants, growing vigorously with good leaf conditions should be treated, ideally at the 3-4 leaf stage, and no later than the 6-leaf stage.

First wet the leaves using a light spray of 2 litres of water per 5000 plants, then immediately afterwards apply a drench of 60mL MINDER in 5 litres of water to a batch of 5000 plants. The drench should then be washed off the leaves using 5 litres of water per 5000 plants. If modules larger than 13mL volume are used, higher water volumes may be used.

This treatment will give useful or partial control of cabbage root fly for up to 6-8 weeks after application.

Modules should be transplanted as soon after drenching as possible. To prevent leaching of spinosad, do not move the plants for 24 hours after drenching. If plants are to be watered before movement, allow 3-4 days between drenching and watering.

If plants are still vulnerable to pest attack a foliar (spray) treatment may be made.

Control of diamond back moth, small cabbage white butterfly, large cabbage white butterfly (and useful control of large cabbage moth) in outdoor brassica crops (broccoli, Brussels sprouts, cabbage, calabrese, cauliflower, Oriental cabbage)

Foliar treatment

MINDER should be applied when pests are first observed, and when caterpillars are small. Apply 200mL/ha in 200-600L/ha of water. Four applications per crop may be made. If a module drench has been performed, two foliar sprays may be made.

Useful control of onion thrips (reduction in crop damage) in outdoor leeks, bulb onions, salad onions, garlic and shallots

Apply MINDER when nymphs and adults are first seen, or when crop damage is first observed. If this is not possible then a product with knock-down activity should be used before the application of MINDER. Monitor pest levels and apply at 200mL/ha in 200-600L/ha of water. No more than three sprays may be made to each crop.

Refer to the RESISTANCE MANAGEMENT STRATEGY section of this label for more information on control of this pest.

Control of Western flower thrip in protected crops of strawberries

Confirm crop selectivity. Apply MINDER when nymphs and adults are first seen, or when crop damage is first observed. The product must be used before thrips become established in the crop. Apply at 15mL per 100L of water (to a maximum of 150mL/ha of ground area). Good coverage of leaf and flower surfaces is vital, without causing run-off on to the soil. Optimum control is achieved by using two sprays at a 7-day interval, if this is justified by pest population monitoring. No more than three sprays should be made per crop, with a maximum of six applications per structure per year, regardless of the crop.

Refer to the RESISTANCE MANAGEMENT STRATEGY section of this label for more information on control of this pest.

Pests Controlled

The following pests are susceptible to MINDER. The susceptibility ratings of pests in the following table refer to good spray cover and application techniques.

Scientific Name	Common name	Control level expected
Adoxophyes orana	Summer tortrix moth	Useful Control
Cydia pomonella	Codling moth	Control
Delia radicum	Cabbage root fly	Useful Control
Plutella xylostella	Diamondback moth	Control
Pieris rapae	Small cabbage white butterfly	Control
Pieris brassicae	Large cabbage white butterfly	Control
Mamestra brassicae	Large cabbage moth	Useful control
Thrips tabaci	Onion thrip	Useful control
Frankliniella occidentalis	Western flower thrip	Control

PREPARATION OF THE SPRAY SOLUTION AND APPLICATION

Shake the container well before use.

Half-fill the spray tank with clean water, add the necessary amount of MINDER and agitate whilst filling the tank.

Rinse container thoroughly by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of container safely.

Do not leave spray solution in the tank overnight.

Water volume

Crops	Minimum L/ha	Maximum L/ha
Apples, pears, crab apples, quinces	300	1500
Brassica crops (foliar sprays)	200	600
Outdoor leeks, onions, garlic and shallots	200	600
Protected strawberries	200	1000

COMPATIBILITY
Please contact your distributor for further information regarding tank-mix partners.

SPRAY TANK CLEANING
Wash all equipment immediately after use, using clean water and a suitable cleaning agent, according to the manufacturer's instructions.

INTEGRATED PEST MANAGEMENT (IPM)
Whenever possible use an Integrated Pest Management programme.

Bees
Do not apply in the heat of the day when bees may be foraging as contact with direct spray may be harmful. Remove the hives during spraying as exposure to direct spray may be harmful to bees. Life Scientific take the most restrictive approach and recommend a period of 24 hours after application and all spray deposits are thoroughly dry before exposure to bees. Water pools with residues of spinosad will continue to pose a risk and should be avoided.

IPM in outdoor crops
Spinosad has been shown to have relatively short persistence.
- As part of an IPM strategy in top fruit, spinosad is known to have no long-term negative effects on populations of predatory bugs (Anthocoris spp.) or predatory mites (Typhlodromus pyri).
- Spray applications in brassicas, leeks, onions and strawberry crops have low risk to predatory insects and mites in the soil, or on the plant canopy. Risks to parasitic Hymenoptera species last for no more than two weeks, as populations rebuild rapidly.
- Brassica plant module applications should be conducted in a specific spray area in order to avoid damage to any beneficial species which may be present. If such an area is not available, ensure that beneficial species are not present in large numbers.

IPM in protected crops
Spinosad has been shown to have relatively short persistence.
- All incoming plant material should be inspected for Western flower thrip. Treat if necessary.
- Plant stocks should be monitored routinely for the presence of pests.
- Physical barriers or screens should be used to prevent insects migrating.
- Use predator and parasite species.
- Select chemical products based on their suitability for Integrated Pest Management programmes.
- Avoid exposing bumble bees to direct spray. Dried spray deposits are harmless.

Spinosad application may cause a temporary reduction in the abundance of insect and mite predators. Generally, there is low impact on most predators. The compound may be harmful to adult parasitic wasps (Hymenoptera). Reintroduction of these species is possible seven days after application, rising to 14 days in winter; reintroduction of Orius laevigatius is possible seven days after application. For most predator species introduction is possible 24 hours after application.

CONDITIONS OF SUPPLY
All goods supplied by the company are of good quality and we believe them to be fit for purpose. However, as we cannot exercise control over their storage, handling, mixing or use or the weather conditions before, during or after application, which may affect the performance of the goods, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our goods are excluded, and no responsibility will be accepted by us or re-sellers for any failure in performance, damage or injury whatsoever arising from their storage, handling, application or use. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in the use of such goods.

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