



TRACER*



INSECTICIDE

Product Registration Number: MAPP 12438.

A suspension concentrate containing 480 g/litre (44.03% w/w) spinosad.

A selective insecticide for use in FIELD VEGETABLES and FRUIT CROPS for the control of CATERPILLAR PESTS and useful control of THRIPS including Western Flower Thrip.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.

PROTECT FROM FROST.

Pack size: 0.5 Litre

Registered by:

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This label is compliant with the CPA Voluntary Initiative Guidance.



SAFETY PRECAUTIONS

Operator protection:

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate and when applying by hand-held equipment.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH HANDS AND EXPOSED SKIN before meals and after work.

WASH CONCENTRATE from skin or eyes immediately.

Environmental protection:

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.

To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies in line with the LERAP requirement.

DO NOT ALLOW DIRECT SPRAY from broadcast air-assisted sprayers to fall within 38 metres of the top of the bank of a static or flowing waterbody, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 5 metres of the top of a ditch which is dry at the time of application. Aim spray away from water.

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, or within 1 metre of the top of a ditch which is dry at the time of application. Aim spray away from water. Spray from hand-held sprayers must not be allowed to fall within 1 metre of the top of the bank of a static or flowing waterbody. Aim spray away from water.

This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer or broadcast air-assisted sprayer, either a LERAP must be carried out in accordance with PSD's published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for three years.

Storage and disposal:

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.

WASH OUT CONTAINER THOROUGHLY, empty washings into the spray tank and dispose of safely.

DO NOT RE-USE CONTAINER for any purpose.



LERAP B
and
Broadcast
Air Assisted
LERAP



**DANGEROUS FOR
THE ENVIRONMENT**

VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY. USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION.

To avoid risks to man and the environment, comply with the instructions for use.

IMPORTANT INFORMATION

FOR USE ONLY AS A HORTICULTURAL INSECTICIDE

Crops/Situations:

Apple, pear, crab apple, quince, Brussels sprout (outdoor), cabbage (outdoor), cauliflower (outdoor), Chinese cabbage (outdoor), leek (outdoor), bulb onion (outdoor), salad onion (outdoor), garlic (outdoor), shallot (outdoor), strawberry (protected crops)

Maximum Individual Dose:

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Maximum Number of Treatments:

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Full details are given in the Important Information area on the attached leaflet

Latest Time of Application:

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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 PROTECTIONS PRODUCTS.

DIRECTIONS FOR USE

IMPORTANT: This leaflet 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.

IMPORTANT INFORMATION

FOR USE ONLY AS A HORTICULTURAL INSECTICIDE

Crops	Maximum Individual Dose	Maximum Number of Treatments	Latest Time of Application
Apple, pear, crab apple, quince			
pre-blossom	150 mL product/ha	1 per crop	7 days before harvest
post-blossom	250 mL product/ha	3 per crop	7 days before harvest
Brussels sprout (outdoor), cabbage (outdoor), cauliflower (outdoor), Chinese cabbage (outdoor)	200 mL product/ha	4 per crop	3 days before harvest
Leek (outdoor), bulb onion (outdoor), salad onion (outdoor), garlic (outdoor), shallot (outdoor)	200 mL product/ha	4 per crop	7 days before harvest
Strawberry (protected crops)	150 mL/ha (15 mL per 100 litres of water)	4 per crop (See Other Specific Restrictions)	1 day before harvest

Other Specific Restrictions:

For protected strawberry apply a maximum of 2 consecutive sprays followed by a minimum 28 day interval before any further applications

In protected situations the total number of applications of *any* spinosad containing product must not exceed 6 per glasshouse/protected structure 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 PROTECTIONS PRODUCTS.

APPLE, PEAR, CRAB APPLE, QUINCE

NOTES

To avoid variable performance timing of application should be optimised and good coverage of the foliage should be achieved. Optimal timing of application of TRACER post-blossom for control of caterpillars is when first egg hatch is predicted based on threshold counts in pheromone traps being reached. It is important when making applications to top fruit to use sufficient water volume to achieve effective coverage and penetration of the foliage.

Where tree height and/or canopy density is reduced, the dose (and water volume) should be adjusted in accordance with an appropriate dose adjustment scheme. Consult your specialist advisor for further information. Further information on the PACE scheme is available from HDC, or see the HDC leaflet (Orchard Spraying: Opportunities to reduce rates) available on the PSD website at <http://www.pesticides.gov.uk/HDC.pdf>.

PRE-BLOSSOM:

Pest	Over wintered tortrix moths
Rate	150 mL/ha
Water volume	300 to 1500 litres of water per hectare
Maximum number of applications	One pre-blossom
Time of application	Apply pre-blossom from early green cluster when first signs of active larvae which spin themselves into webs are first observed.
Latest time of application	7 days before harvest

POST-BLOSSOM:

Pest	Summer fruit tortrix moth, codling moth
Rate	250 mL/ha
Water volume	300 to 1500 litres of water per hectare
Maximum number of applications	Three post blossom
Time of application	<p>Apply post-blossom when first egg hatch is predicted based on threshold counts in pheromone traps being reached. Carefully monitor pest development to determine whether repeat applications are necessary. If required, make a repeat application of TRACER (or a similar compound with activity against moth larvae) timed to coincide with egg hatch of the larvae. Effective control of caterpillars in top fruit usually requires several insecticide sprays per year. A 2 or 3 spray programme at 10 day intervals may be needed when conditions favour rapid pest development. Where possible, apply TRACER in programmes with products with a different mode of action as a good resistance management strategy.</p> <p>Codling moths, Summer Fruit Tortrix moths: Mid-June to August in most seasons.</p> <p>Fruit Tree Tortrix moth: Limited data suggest that useful control of fruit tree tortrix moths can be achieved when the label rate for summer fruit tortrix moth and codling moth is applied. Severe or late attacks in late July or early August may require further applications.</p>
Latest time of application	7 days before harvest

BRASSICA CROPS (BRUSSELS SPROUT, CABBAGE, CAULIFLOWER, CHINESE CABBAGE)

Pest	Caterpillars: Control of Diamond back moth, small cabbage white butterfly, large cabbage white butterfly, and useful control of large cabbage moth
Rate	200 mL/ha
Water volume	200 to 600 litres of water per hectare
Maximum number of applications	Four per crop or three per crop if a modular drench application has been made.
Time of application	Spray when damage is first seen, and preferably when caterpillars are small. If repeat applications are required try to use in programmes with other insecticides with a different mode of action.
Latest time of application	3 days before harvest

LEEK, BULB ONION, SALAD ONION, GARLIC, SHALLOT

Pest	Useful control of onion thrips and reduction in damage
Rate	200 mL/ha
Water volume	200 to 600 litres of water per hectare
Maximum number of applications	Four per crop
Time of application	Early application to control the pest is essential. Apply when nymphs and adults are first seen or at very first signs of crop damage. Onion thrip have shown resistance to certain chemical groups and resistance management steps should be taken. It is important to monitor pest levels and apply a maximum of four sprays at 10 day intervals depending on the pest pressure. Where repeat applications are required apply TRACER in programmes with other insecticides with a different mode of action. It is vital that Tracer is applied before the pests become well established in the crop. If thrips are already well established in the crop consider using a product with knockdown activity such as dimethoate before applying Tracer.
Latest time of application	7 days before harvest

PROTECTED CROPS OF STRAWBERRY

Pest	Control of Western Flower Thrip
Rate	15 mL per 100 litres of water (maximum of 150 mL/ha)
Water volume	200-1000 litres of water
Maximum number of applications	4 per crop (2 consecutive)
Time of application	<p>It is important to monitor pest levels. Apply when nymphs and adults are first observed or at very first signs of crop damage. Applications should be made before thrips are established. During spraying, make sure that the inside and outside parts of the leaves and flowers are covered. The spray technique and the amount of water must cover the plant without causing run-off and control often depends on the quality of the spraying (machinery, quantity of water, etc). Best control is achieved by a sequence of two treatments at 7 day intervals (if needed).</p> <p>For resistance management purposes there must be a minimum interval of 28 days after the second application before any further applications of TRACER are made. This is an opportunity to allow beneficial insects to be effective in IPM programmes. Restrict the number of sprays to no more than 6 applications per glasshouse/protected structure in a 12 month period of <i>any</i> spinosad containing product regardless of crop (including ornamentals) being treated. Tracer should be applied in programme with other insecticides and in combination with integrated pest management.</p>
Latest time of application	1 day before harvest

NOTES

TRACER* insecticide has a very specific pest spectrum. Only apply TRACER against pests and crops on the label.

Taint tests have not been conducted using TRACER. Growers should consult processors before use.

Following application allow 12 hours for TRACER to become rainfast before applying irrigation.

Wash spray tank and equipment (including knapsack sprayers) thoroughly with water and a liquid detergent immediately after use. Spray out. Fill with clean water and leave overnight. Spray out again before using another product.

MODE OF ACTION

TRACER enters the insect primarily through contact and ingestion. Contact occurs by direct application or by insect movement on a treated surface. Ingestion occurs from feeding on treated surfaces. Following entry, TRACER acts on a unique neuro-receptor site of the insect. Symptoms appear almost immediately and complete mortality occurs within a few hours. TRACER is not systemic but does show translaminar movement.

CROP SAFETY

Outdoor Crops

TRACER has been tested on a wide range of outdoor crops. TRACER has good plant safety when applied at different growth stages, including flowering.

Protected Strawberry

It is recommended to test TRACER on a small number of plants to confirm the crop safety before spraying a large area.

RESISTANCE

GENERAL

To reduce the possibility of the development of resistance developing:

- Total reliance on one pesticide will hasten the development of resistance: Spinosad has a different mode of action from other insecticides and is most effective when applied in planned programmes with other insecticides with different modes of action.
- Avoid use of the same active ingredient or mode of action on consecutive generations of insects. However, multiple applications to reduce a single generation are acceptable. If uncertain of the generation cycle, no more than three consecutive applications (2 for protected crops) should be used nor should there be continuous use for more than 30 days. Do not use TRACER on consecutive generations for insects which show a high risk of resistance such as thrip species.
- Restrict the number of sprays to no more than 6 applications per glasshouse/protected structure in a 12 month period of *any* spinosad containing product regardless of crop being treated (including ornamentals).
- Do not use reduced label rates when applied alone or in tank mixtures.

OUTDOOR CROPS

- Onion thrip have shown resistance to certain chemical groups and resistance management steps should be taken as it is considered a high resistance risk pest. Carry out careful monitoring: for onion thrip apply when the pest is first seen and repeat the application if needed after 10 days for leeks, bulb onion, salad onion, garlic and shallot. It is vital that Tracer is applied before the pests become well established in the crop.
- Apply no further sprays of TRACER (or any other spinosad containing products) once the maximum number of 4 sprays have been applied.
- If thrips are already established consider using a product with knockdown activity such as dimethoate before applying TRACER.
- Carry out careful monitoring; for caterpillar control apply TRACER at egg hatch in top fruit and when pests are first seen in other field crops. Repeat applications at 10 day intervals only if needed.
- Applications should be targeted against early insect developmental stages whenever possible.
- If possible, include multiple tactics (eg cultural or biological controls) when using Integrated Pest Management Programmes.
- Use Tracer in programmes with other effective insecticides of a different mode of action to reduce the possibilities of resistance occurring.

PROTECTED STRAWBERRY CROPS

- Western flower thrip have shown resistance to certain chemical groups and resistance management steps should be taken as it is considered a high resistance risk pest in protected crops/plants.
- Before undertaking a spray programme with TRACER establish whether incoming plant material has previously been treated with TRACER or another spinosad containing product.
- Carry out careful monitoring and apply when the Western flower thrip is first seen making repeat the applications at 7 day intervals only if needed with a maximum of 2 consecutive spinosad sprays to protected strawberry and leave at least 28 days before any further applications of TRACER (or any other spinosad containing product) to the structure (even if only treating some of the plants).
- For protected strawberry restrict the total number of sprays to no more than 4 applications of TRACER per strawberry crop.
- Restrict the total number of sprays to no more than 6 in a 12-month period in the same glasshouse/protected structure of *any* spinosad containing product regardless of the crop being treated (including ornamentals and all year round (AYR) chrysanthemums).
- Apply in programmes with other insecticides with a different mode of action and use no further sprays of TRACER (or spinosad containing products) once the maximum number of sprays have been applied.
- If the final insecticide application to a crop was spinosad, choose a different insecticide active ingredient to begin spraying on the next crop.
- Applications should be targeted against early insect developmental stages whenever possible.
- Do not use reduced label rates.
- Whenever possible use an Integrated Pest Management programme
- Choose resistant cultivars.

INTEGRATED PEST MANAGEMENT

- Whenever possible use an Integrated Pest Management programme.
- For further information and the latest advice on beneficial insects and mites and their integrated use with TRACER consult Landseer Limited.

BEEES

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

OUTDOOR CROPS

- TRACER can be used in an integrated pest management strategy in top fruit as it has been found to have no long term adverse effects on predatory bugs *Anthocoris spp* or the predatory mite *Typhlodroumus pyri*.
- Overall applications of TRACER to control pests in field brassicas, leeks, onions and strawberry are of low risk to predatory insects and mites both in the plant canopy and on the soil below. There is risk to parasitic *Hymenoptera* but these effects are of short duration (two weeks) as the persistence of TRACER is low and recovery of these highly mobile species would be rapid.
- Do not apply in the heat of the day when bees may be foraging as contact with direct spray may be harmful. Remove the hive during spraying as exposure to direct spray may be harmful to bees. Dow AgroSciences take the most restrictive approach and recommend that a period of 24 hours after application and all spray deposits are thoroughly dry before exposure of bees. Water pools with residues of spinosad will continue to pose a risk and should be avoided.
- TRACER, when used according to good agricultural practice is unlikely to pose an unacceptable risk to honeybees and beneficial arthropods.

PROTECTED STRAWBERRY CROPS

As part of an Integrated Pest Management programme.

- Inspect all incoming plant material for presence of Western flower thrip and treat if necessary.
- Monitor stock routinely to determine the need for control measures.
- Use screens or barriers to prevent insects migrating.
- Use predators and parasites.
- Carefully choose any chemical products used in the pesticide programme and consider any side effects on bees and beneficial arthropods

TRACER has been tested on a wide range of predators and parasites used to control pests in protected crops. The active ingredient, spinosad has been shown to be of low impact to many insect and mite predators but harmful to adults of most parasitic wasps (*Hymenoptera*).

Exposure to direct spray is harmful to bumble bees, but dry spray deposits are harmless.

When applied to plants where insect and mite predators are present TRACER may cause a temporary reduction in abundance.

For susceptible predators (parasitic hymenoptera) re-introduction is possible after 7 days following application (with perhaps 14 days in winter months). For most other predators introduction is possible 24 hours after application. Re-introduction of *Orius laevigatus* is advised one week later.

TRACER, when used according to good agricultural practice is unlikely to pose an unacceptable risk to honeybees and beneficial arthropods.

Beneficials may be safely introduced to treated plants after an application of TRACER according to the following table:

TRACER Recommendations for Integrated Use with Predators and Parasites			
Beneficial Type	Species	*Toxicity Class Rating	Introduction Best Practices
Predatory mites	<i>Phytoseiulus persimilis</i>	<i>HarmLess (1)</i>	Data suggest predatory mites introduced when spray deposits are dry may be affected but will recover after 24 hours.
	<i>Amblyseius californicus</i>	<i>HarmLess (1)</i>	
	<i>Amblyseius cucumeris</i>	<i>HarmLess (1)</i>	
Predatory insects	<i>Chrysoperla carnea</i>	<i>HarmLess (1)</i>	Data suggest predatory insects introduced when spray deposits are dry may be affected but will recover after 24 hours. <i>Orius laevigatus</i> in best introduced after 7 days. <i>M.caliginosus</i> may be introduced on the day of application once spray deposits are dry. If TRACER is applied directly to plants containing <i>M.caliginosus</i> there may be a short-term reduction in numbers.
	<i>Orius laevigatus</i>	<i>Slightly harmful (2)</i>	
	<i>Orius insidiosus</i>	<i>HarmLess (1)</i>	
	<i>Aphidoletes aphidimyza</i>	<i>HarmLess (1)</i>	
	<i>Macrolophus caliginosus</i>	<i>Harmful (4)</i>	
Parasitic wasps	<i>Aphidius colemani</i>	<i>Moderately Harmful (3)</i>	Direct applications of TRACER are harmful to parasitic wasps. Wait two weeks after an application of TRACER before introducing new parasites
	<i>Encarsia formosa</i>	<i>Moderately Harmful (3)</i>	
	<i>Trichogramma brassicae</i>	<i>Harmful (4)</i>	
	<i>Diglyphus isaea</i>	4	

*Toxicity ratings:

- Class 1 HarmLess less than 25% reduction
- Class 2 Slightly harmful 25–50 % reduction
- Class 3 Moderately harmful 50-75 % reduction
- Class 4 Harmful more than 75% reduction

For further information and the latest advice on beneficial insects and mites and their integrated use with TRACER consult Dow AgroSciences.

MIXING

To ensure thorough mixing of the product invert the container several times before opening. Half fill the spray tank with water, begin agitation and add the required quantity of TRACER. Fill up the spray tank, agitating continuously to ensure thorough mixing, and maintain agitation until spraying is complete. Use only clean water for mixing. Use the spray solution immediately after preparation.

SPRAY VOLUME

Water volume should reflect the need for uniform cover and penetration of the leaf canopy.

Crop	Water Volume	Comment
Apple, pear, crab apple, quince	Minimum: 300 litres/ha Maximum: 1000 1500 litres/ha	It is particularly important when spraying apples and pears post-blossom to achieve full penetration of the leaf canopy and uniform coverage of the foliage and blossoms or fruitlets.
Brussels sprout, cabbage, cauliflower, Chinese cabbage, leek, bulb onion, salad onion, garlic, shallot	Minimum: 200 litres/ha Maximum: 600 litres/ha	Ensure good penetration of the foliage.
Strawberry (protected)	Minimum: 200 litres/ha Maximum: 1000 litres/ha	Ensure good penetration of the foliage.

APPLICATION EQUIPMENT

Apply TRACER using a horizontal boom sprayer or a broadcast air assisted sprayer.

For protected strawberry crops apply TRACER by conventional hydraulic sprayer or by hand-held applicators.

Ensure spray equipment is in good working order and has been calibrated according to the manufacturers' recommendations.

Dow AgroSciences Conditions of Supply

All goods supplied by us are of high grade and we believe them to be suitable but, 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. 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.