POISON

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



Thumper
Insecticide

ACTIVE CONSTITUENT: 20 g/L ABAMECTIN

GROUP	6	INSECTICIDE

For the Control of Couch Mite and Soil Borne Nematodes in Turf as specified in the Directions for Use

IMPORTANT: READ THIS LEAFLET BEFORE USING THIS PRODUCT

APVMA Approval No.: 63594/103761

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DIRECTIONS FOR USE
RESTRAINTS
DO NOT apply if rainfall imminent.
DO NOT apply if forecast heavy rain or storms are likely to cause runoff.
DO NOT apply by aircraft.
DO NOT apply through any type of irrigation system or ultra low volume spray system
DO NOT store a suspension of Thumper Insecticide for more than two days, otherwise significant breakdown may occur.
DO NOT apply by backpack application.
DO NOT apply by hand gun sprayer.
DO NOT apply with a nozzle height greater than 50 cm above the ground.

Couch Mite Control

Situation	Pest	Rate	Critical Comments
Turf	Couch Mite	1 – 2 L/ha (10 – 20 mL/ 100 m^2)	• Apply Thumper Insecticide at the low rate (1 L/ha) in an early curative situation (after first symptoms are apparent) to control current and prevent further pest numbers from breeding and building up damaging populations. • Apply Thumper Insecticide at the high rate (2 L/ha) when pest populations are at peak damage levels and the turf stand requires an immediate reprieve from pest attack. • Best results are achieved if applied as populations begin to build rather than at the peak of population growth as pest damage can be avoided with early season applications. • Generally Thumper Insecticide takes approximately 7 - 10 days to reach maximum mite control. • Good spray coverage is essential. Apply in water volume of 250 – 500 L water per ha (2.5 – 5 L/100 m^2). • It is important to keep within the water volume range to ensure maximum leaf uptake of Thumper Insecticide, which will give several weeks residual control. High water volumes may reduce efficacy (see 'GENERAL INSTRUCTIONS – Couch Mite' for further information). • Always add non-ionic surfactant (1000 g/L – non buffering type) at 250 mL/100 L (0.25 % v/v) of final spray volume. • DO NOT use if rainfall is expected before spray has dried as reduced efficacy may result.

Soil Borne Parasitic Nematode Control

Situation	Pest	Rate	Critical Comments
Turf	Soil Borne Parasitic Nematodes	5 L/ha (50 mL/100 m^2) A second application is required 14 days after the first application	• Apply Thumper Insecticide in an early curative situation (after appropriate nematode extraction, identification and counts). When counts of a particular nematode species are extremely high, well above that nematode species' threshold (i.e. Sting Nematode: when counts are 100 nematodes/200 g soil or higher), apply a treatment of Thumper Insecticide (1 treatment = 2 applications 14 days apart). • DO NOT apply to dry soil. • Avoid application under windy or very hot and drying conditions. • Irrigate immediately while leaves are still wet with spray deposit (usually within a few minutes) and apply a minimum of 10 mm of water (ensuring you reach the bottom of the root zone). • Regulate the volume of irrigation to avoid the formation of pools and puddles. • DO NOT allow spray deposit to dry on leaves before applying irrigation. • DO NOT irrigate to the point of runoff. • Good spray coverage is essential. Apply in a convenient amount of water. • An addition of a soil penetrant is recommended to ensure an even matrix flow through the soil profile. • Switch to an alternative chemistry class if counts stay high and symptoms persist. See 'GENERAL INSTRUCTIONS – Application for Soil Borne Parasitic Nematodes' for further application information.

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

GENERAL INSTRUCTIONS
Thumper Insecticide contains 20 g/L abamectin in the form of a micro-emulsion concentrate.

Couch Mite
For Couch Mite control, Thumper Insecticide is an acaricide with contact and stomach action.

Following application, Thumper Insecticide penetrates leaf tissue where its translaminar activity provides extended residual control of mites. It is taken up by mites feeding on both the upper and lower surfaces of leaves, and remains in the leaves for several weeks offering residual control of sucking mites.

Foliage-feeding mites ingest Thumper Insecticide, which affects the nervous system of the mites. Shortly after exposure, the mite stops feeding, becomes irreversibly paralysed and no further damage to the plant occurs. Death occurs within 7 - 10 days.

Reduced efficacy may occur if water volumes higher than recommended are used due to Thumper Insecticide washing off the leaf. This will not allow Thumper Insecticide to penetrate the leaf tissue hence losing the residual control of mites.

Mites: Upon hatching the nymphs molt twice (2 instars) and molt again into a sexually mature adult. In most cases adult mites must feed prior to laying eggs. This is where the correct water volume to achieve maximum leaf tissue penetration is vital as the mite will feed on the plant, ingest Thumper Insecticide and die prior to laying eggs, hence stopping future generations from evolving. No eggs laid means nothing to hatch.

The complete life cycle from egg to adult is 7 to 10 days, and it is faster with higher temperatures.

Each female produces approximately a dozen eggs.

Thumper Insecticide is active against all mite leaf feeding stages (no effect on eggs).

Thumper Insecticide is ideal for either newly sown/planted or established turf.

Apply Thumper Insecticide at the low rate (1 L/ha) in an early curative situation (after first symptoms are apparent) to control current and prevent further pest numbers from breeding quickly and building up damaging populations (i.e. an early season application).

Apply Thumper Insecticide at the higher rate of 2 L/ha when pest populations are at peak damage levels and the turf stand requires an immediate reprieve from pest attack.

Application for Couch Mite
Apply by ground boom sprayer or low-pressure hand wand.
To be effective Thumper Insecticide requires thorough spray coverage. Ensure that equipment is properly calibrated to give an even distribution at the correct volume. Application volume should be adequate to ensure thorough and even coverage of turf leaves with penetration into the crowns. Total application volume should be 250 - 500 L/ha. Use coarse droplets (i.e. Air induction flat fan 025 to 04 nozzles). In higher cut turf (>15 mm) a significant spray shielding effect can occur, impacting negatively on spray penetration and even coverage at low application volumes.

Do not make applications when unusually hot conditions are present or expected within 24 hours after application, or under poor or slow drying conditions.

Soil Borne Parasitic Nematodes
For Soil Borne Parasitic Nematode control Thumper Insecticide acts as an anthelminthic compound. Thumper Insecticide has no systemic activity through plant roots (does not translocate through the roots). To ensure control Thumper Insecticide must be applied evenly through the soil profile with rainfall/irrigation following an application to achieve contact with the Soil Borne Parasitic Nematodes. The Nematodes absorb Thumper Insecticide through contact. By incorporating Thumper Insecticide into the soil profile it moves alongside the growing roots thus protecting the plant from nematode attacks.

Application for Soil Borne Parasitic Nematodes
Application volumes for Soil Borne Parasitic Nematodes can be in a convenient amount of water, remembering that good spray coverage is essential. If using a ground boom spray, for best results use extremely coarse droplets (i.e. Turbo Floodjet* (TF5) or TurfJet* (TTJ10)) and total application volume of approximately 1000 L/ha. Preferably spray onto wet or dewy grass.

An addition of a soil penetrant is recommended to ensure an even matrix flow through the soil profile.

Washing in should commence as soon as possible after application. DO NOT allow spray deposit to dry on leaves before applying irrigation. Irrigate immediately while leaves are still wet with spray deposit (usually within a few minutes) and apply a minimum of 10 mm of water (ensuring you reach the bottom of the root zone). Regulate the volume of irrigation to avoid the formation of pools and puddles. DO NOT irrigate to the point of runoff.

Remember that Thumper Insecticide controls Soil Borne Nematodes by contact. If you do not incorporate an application of Thumper Insecticide to the bottom of your root zone immediately after spraying then you cannot control the Soil Borne Nematodes feeding on the whole root system. No contact equals no control.

Do not make applications when unusually hot conditions are present or expected within 24 hours after application, or under poor or slow drying conditions.

TURF MONITORING

Couch Mite

Effective mite control depends upon regular monitoring of the turf. Check the turf area regularly remembering that mite activity will be first noticed on developing shoots and it is important to protect the new growth.

Damage is characterised by a yellowing of the tips of the leaves, a turning upward and inward of the leaves and shortening of the internodes, and a rosetting or tufting of the grass (usually described in the turf industry as 'witches broom').

The thinning of turf can be caused by several factors and damage by Couch mite is often misdiagnosed as mutation or nematode infestation. Therefore, it is always a good idea to collect samples of live plants from the effected areas (i.e. witches brooms). Samples should be sealed in a plastic bag and sent to your local turf laboratory/insect specialists for identification.

Remember that chemical control will treat the pest but not repair the turf damage.

Soil Borne Parasitic Nematodes

Effective Soil Borne Parasitic Nematode control depends upon regular monitoring of the turf medium soil. Conduct a Nematode Analysis (identification and count of nematodes) regularly to monitor the Nematodes present and thresholds applicable to your situation.

If your site history shows damage annually during seasonal periods you should initiate applications early, before periods of peak root growth. This will protect actively growing roots.

There can be interactions between Soil Borne Nematodes and fungal diseases as nematodes can cause wounds to the root system and these wounds are very prone to infection by fungal pathogens. Therefore nematode feeding can increase susceptibility to fungal root diseases.

Conduct a Disease Analysis (primarily on your root system) regularly to monitor if any disease is present. If you do have a fungal root disease present then an appropriate curative fungicide will need to be applied.

You will see significant increases in turf grass quality and improved nematode management when implementing a preventative fungicide program primarily for root diseases. This will reduce the disease pressure and allow root health to improve whilst Thumper Insecticide is relieving Nematode attacks.

MIXING

Measure the required amount of Thumper Insecticide, add to the partly filled spray tank and then add the remainder of the water.

COMPATIBILITY

As formulations of other manufacturer's products are beyond the control of Turf Culture Pty Ltd, and water quality varies with location, all mixtures should be tested prior to mixing commercial quantities.

INTEGRATED PEST MANAGEMENT

The possible effects of Thumper Insecticide on integrated pest management (IPM) strategies in the turf industry have not been studied at the proposed rates. However, based on available information, it cannot be ruled out that Thumper Insecticide may have an adverse effect on non-target beneficial turfgrass invertebrates where such IPM is practiced.

INSECTICIDE RESISTANCE WARNING

GROUP	6	INSECTICIDE

For insecticide resistance management Thumper Insecticide is a Group 6 insecticide. Some naturally occurring insect biotypes resistant to Thumper Insecticide and other Group 6 insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Thumper Insecticide or other Group 6 insecticides are used repeatedly. The effectiveness of Thumper Insecticide on resistant individuals could be significantly reduced.

Since the occurrence of resistant insects is difficult to detect prior to use, Turf Culture Pty Ltd accepts no liability for any losses that may result from the failure of Thumper Insecticide to control resistant insects. Thumper Insecticide may be subject to specific resistance management strategies. For further information contact a Turf Culture Pty Ltd representative.

Resistance
Experience has shown that repeated use of one particular insecticide (for control of mites or nematodes) from the same chemical group can lead to the early development of resistance to that insecticide chemical group. Therefore Thumper Insecticide should not be applied in two consecutive seasons without an unrelated chemical being used in between. Alternate Thumper Insecticide with approved products from other chemical groups. Consult a Turf Culture Pty Ltd representative for advice on chemical groups.

RE-ENTRY PERIODS
Public
DO NOT allow public access until the spray has dried.
Workers
DO NOT undertake occupational re-entry activities on turf treated for the control of couch mite until the spray has dried, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow length chemical resistant gloves.
DO NOT undertake low exposure occupational re-entry activities such as irrigation and mowing on turf treated for the control of nematodes until the spray has dried.
DO NOT undertake high exposure occupational re-entry activities such as transplanting of treated turf for the control of nematodes until 8 days after application, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow length chemical resistant gloves.

APPLICATION RECORDS
Users of this product MUST make an accurate written record of the details of each spray application within 24 hours following application and keep this record for a minimum of 2 years. The spray application details to be recorded are:

1. Date, with start and finish times of application
2. Location / address of area(s) sprayed
3. Full name of the product, product batch number (BN) and date of manufacture (DOM)
4. Amount of product used per hectare and the number of hectares treated
5. Turf species/situation and weed/pest
6. Wind speed and direction during application
7. Air temperature and relative humidity during application
8. Spray irrigation or rainfall after application, start time, duration and amount (mm)
9. Equipment used; nozzle brand, type, spray angle, operating pressure and total water volume applied per hectare
10. Name of person applying this product

(Additional record details may be required by the State or Territory where this product is used)

PROTECTION OF LIVESTOCK
Highly toxic to bees. Will kill bees foraging in or near treated turf or in hives, which are over-sprayed or reached by spray drift. Residues may remain toxic to bees for several days after application.
Do not graze treated turf/lawn or feed turf/lawn clippings from any treated area to poultry or livestock.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT
Very toxic to aquatic life. DO NOT apply under weather conditions or from spraying equipment that may cause spray to drift from the target area. DO NOT contaminate streams, rivers, wetlands or watercourses with this product or used containers.

STORAGE AND DISPOSAL
Store in the closed, original container in a dry, cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. DO NOT use this container for any other purpose.
Triple or preferably pressure rinse containers before disposal. 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 deliver empty packaging for appropriate disposal 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
Harmful if swallowed. Will irritate the eye. Avoid contact with eyes. When opening the container, preparing the product for use and using the product, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow-length chemical resistant gloves and face-shield or goggles. If product or spray in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves and contaminated clothing.

FIRST AID
If poisoning occurs, contact a doctor or Poisons Information Centre on Australia 13 11 26. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

MATERIAL SAFETY DATA SHEET
For further information refer to the Material Safety Data Sheet (MSDS), which is available from the supplier or from the manufacturer's website: www.turfculture.com.au

CONDITIONS OF SALE
The use of Thumper Insecticide being beyond the control of the manufacturer, no warranty expressed or implied is given by Turf Culture Pty Ltd regarding its suitability, fitness or efficiency for any purpose for which it is used by the buyer, whether in accordance with the directions or not and Turf Culture Pty Ltd accepts with no responsibility for any consequences whatsoever resulting from the use of this product.

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In a Transport Emergency Dial 000 Police or Fire Brigade