ecogrow

A CLEANRIVER COMPANY

BETTER PLANTS • BETTER WORKPLACE • BETTER PLANET

USING TECHNOLOGY DEVELOPED BY

CSIRO ENTOMOLOGY

FREQUENTLY ASKED QUESTIONS

WHAT ARE THE ADVANTAGES OF USING ENS OVER TRADITIONAL INSECTICIDES?

The main advantage in using EN technology is that there are no toxicity effects to humans, aquatic life or beneficial organisms in the soil. There are no requirements for withholding periods, and no exposure risks for applicators or users (i.e. golfers, bowlers).

Environmentally, the use of traditional pesticides groups such as Organophosphates and Carbamates etc has a number of negative effects that include: -

- ***Groundwater Contamination***
- ***Non-Target Insecticide Effects***
- ***Insecticide Resistance***
- ***Insecticide Enhanced Biodegradation***

The use of ENs for insect control eliminates all the above environmental management and litigation concerns.

WHAT ARE THE SAFETY ISSUES WHEN USING AND HANDLING ENS?

The advantages of using these bio-pesticides are in operator and end-user safety, absence of withholding periods, minimal harm to natural enemies and lack of environmental pollution

Various tests against mice, rabbits and monkeys (Gaugler, 1979; Wang et al, 1983, 1984; Wang & Liu, 1983; Boemare, et al, 1996) have shown that the ENs tested are harmless when fed, injected or inhaled. They are also harmless to earth worms (Capinera et al, 1982) and other non-insect organisms including plants and they are of course nonpolluting. They have now been used on a large scale in various countries for over ten years and large numbers of production workers have been exposed to thousands of billions of them without any adverse effects being recorded. The EPA in the USA, like many other countries including Australia, has exempted ENs from registration.

DO ENS DAMAGE TURF?

ENs naturally occur in the soil and have no effect on the health of plants. The bacteria that ENs use to kill insects also has no toxicity or effects on turf grasses

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WILL USING ENS HAVE ANY EFFECT ON OTHER BENEFICIAL ORGANISMS IN THE SOIL?

No, ENs are very host specific to particular insect groups and will have no impact on beneficial soil organisms such as bacteria, fungi protozoa, ringworms or earthworms.

HOW ARE THEY APPLIED?

Nematodes are supplied in a cellulose-based carrier. ENs are applied like any traditional spray application via a boom spray, pump and hose or venturi system. Water volume is critical and we suggest for weevils and scarabs apply a min 500 litres per/ha, for Caterpillar controls apply at least 250 litres per/ha. Post irrigation is also essential to ensure that the nematodes can connect to the insect host. If the soil is dry pre –irrigation is important.

WHAT IS THE DIFFERENCE BETWEEN PLANT PARASITIC NEMATODES AND ENTOMOPATHOGENIC NEMATODES?

Most plant parasitic nematodes those infesting turf have a stylet or spear at their head end, rather like a hypodermic syringe, which is used to pierce plant cells and then suck out fluids from within.

The entomopathogenic nematodes have no such stylet, and are about as similar to plant parasitic nematodes as human beings are to goldfish.

WILL ENS HAVE POTENTIAL TO HARM ANY ON SITE FAUNA (I.E. DUCKS)?

Definitely not! ENs have no mammalian toxicity and therefore are safe to humans, aquatic life, ducks and birds.

WILL OTHER PRODUCTS AFFECT THE RESULTS I GET WITH ENS?

Compatibility sheets are available from ECOGROW Australia Pty Ltd. Overall, nematicides are not compatible, and some fungicides herbicides and other insecticide groups have some tolerance, but may require an interval of a number of days or weeks before applying ENs

IS THIS AN EXPENSIVE TREATMENT?

Actually, the cost of using ENs can be about the same cost as the chemical alternative although completely safe with no harm caused to humans or non-targeted insect life in the soil. Even if the initial cost seems higher if measured on a hectare by hectare basis, the annual usage cost can be considerably lower! This is due to the single treatment normally required, and efficacy of the EN's in controlling pests.

ARE THERE SPECIAL REQUIREMENTS FOR USING ENS?

In general, the application of ENs is easier than using a chemical. EN solutions are simply sprayed onto affected areas using normal spray equipment. However, no special safety equipment such as protection required for chemicals is necessary. Treated areas are also available for use without any withholding period.

Like all EN products, however, there are a few golden rules. For example, they must be applied at dusk due to their sensitivity to UV light. ENs also require a moisture film in order to migrate from the thatch and into the soil area. It is also important to ensure that the soil remains moist for the duration of the treatment period.

ONCE I'VE TREATED THE TURF, WILL I NEED TO REAPPLY?

The answer is generally no. ENs breed in large numbers inside dead insect hosts and the resulting offspring are released back into the soil. This allows a rapid growth in the EN population. It is also known that under ideal conditions, ENs will survive for up to 4 weeks in the soil when there are no target insects available as a food source. Because of this, ENs usually provide a season-long control of the targeted insect.

An exception would be where a re-infestation occurred after sufficient time had elapsed for the EN population to decline. This is an area of continuing research.

IS FURTHER RESEARCH STILL REQUIRED?

As with all Ecogrow EN products, constant and on-going research is currently in train. We constantly look for improvements in application methodology, improved nematode strains (increased virulence), longer in-soil life and refined or reduced application rates. Ecogrow does not make products available until effective and independently generated trial data is available, and so efficacy of listed products is guaranteed.

CAN I GET TECHNICAL ASSISTANCE?

Absolutely! The key to any IPM strategy lies in monitoring. EN solutions are both curative and preventative, and a preventative application can provide year long treatment across likely effected areas, or curative application to effected areas only..

Ecogrow consultants are available to assist in establishing an application program and in setting up IPM strategies for the control and/or suppression of this and many other common pests