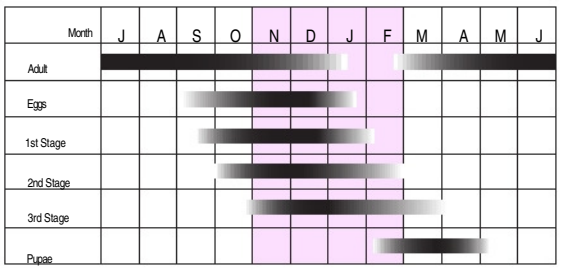
# Monitoring:

**Optimum Time for EN Application**




The best results and most effective control for African Black Beetle are achieved during the second instar stage right through until pupation. ENs are not effective against adult beetles. Whilst ENs will be effective against first instars, the small size of the larvae mean that ENs will have some difficulty in locating and infecting a host.

Monitoring is the key to good integrated pest management and effective biological control. It is therefore useful to adopt a monitoring program so as to correctly identify the optimum time to treat a turf area.
There are a number of ways in which this can be achieved.

**1.** Use a mild detergent mixture on 'high risk' turf during the period of egg laying. This will bring adult beetles to the surface which will indicate that eggs are likely to be there. Core samples can then be used to determine the population density.

**2.** Surface checks carried out during September, October and November can determine an adult beetle population. Once eggs have been laid, the female bettle dies.
Increased bird activity may also be a good indicator.

The biological control program is designed to ensure optimum turf quality, rather than the elimination of an entire population of insects. Therefore, it is useful to determine what threshold level represents a real threat to turf in a given situation and environment. Only when the threshold is exceeded, or likely to be exceeded, should ENs be applied. Seasonal change can result in varying degrees of damage from year to year.

At the same time, secondary damage caused by birds, foxes and other predators feeding on third instar larvae can be very severe, and so treatments should be undertaken to avoid such risk.

In most areas of Australia, an EN application during the months of December and January are most effective, and will avoid the risk of bird or other predator damage.

## Golden Rules for Success:

**1. Only apply nematodes at dusk. Do NOT apply at other times, even if overcast!**
**2. Do not apply when the ambient temperature exceeds 32oC, or the soil temperature exceeds 25oC**
**3. Avoid high or drying winds**
**4. Ensure treated area is irrigated both before and after application of ENs**
**5. Apply ENs as evenly as possible**
**6. Maintain moist soil conditions for not less than two weeks after treatment**

# Application:

**Handling:**

**1.** Your supply of ENs will be packed fresh in our Canberra factory and will arrive on the day you specified in your order.

**2.** Ideally, the product should be used immediately, however with care, this product may be stored for a limited period - but not more than 7 - 10 days

**3.** Store flat and unopened in a cool place. Avoid storing in any area with a temperature exceeding 21oC. **Do not refrigerate.**

**4.** Your order contains a chill pack. This is non-toxic and can be discarded safely.

**Application via Boom Spray:**

**1.** Ensure that the soil temperature exceeds 12oC

**2.** Ensure spray equipment has been rinsed and that all filters have been removed

**3.** If using a boom spray, fit nozzles equivalent to Hardi size 25 or greater (fertiliser type jets)

**4.** Ensure that the area to be treated is moist, pre-irrigate moist soils

**5.** Fill the spray tank with approx. 2/3 of the required water. (You will require 500 litres of water per hectare of treatment)

**6.** With the agitation operating, add the required number of packs of African Black Beetle TURFNEM product. (see application rates below)

**7.** Spray area as evenly as possible. In some cases, greater evenness may be achieved by increasing the water (see 5.) and spraying twice in a cross-hatch pattern

**8.** Irrigate at a rate of 12mm immediately after treatment, and maintain moist soil conditions for the next 1 to 2 weeks.

**Application Rate:**

The African Black Beetle treatment has been formulated such that optimum results are achieved at the rates specified in the accompanying instructions. These should be applied with a minimum quantity of 500 litres of water per hectare.

**Call your distributor or Ecogrow Australia if you have any questions about your application.**

**Ecogrow Australia also supplies ENS for:**

* **Argentine Scarab**
* **Billbug**
* **Argentine Stem Weevil**
* **Blackheaded Cockchafer**
* **Armyworm, Sodwebworm, Cutworm**

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