



**CULITHOR™**

**GRANULAR MOSQUITO  
GROWTH REGULATOR**

**Regulate  
Mosquito Emergence**

**Long Term Mosquito Management**

**UNIQUE INTELLIGENT GRANULAR MICROENCAPSULATION TECHNOLOGY™**

**ENSYSTEX™**  
LEADING INNOVATION IN PEST MANAGEMENT





# REGULATE MOSQUITO EMERGENCE

## LONG TERM MOSQUITO MANAGEMENT



### CULITHOR™ PROVIDES LONG-TERM CONTROL

**CULITHOR Granular Mosquito Growth Regulator uniquely uses our *Intelligent Granular Microencapsulation Technology™* to provide controlled, long-term prevention of adult mosquito emergence.**

CULITHOR is an innovative approach to mosquito larval management programs providing long term control of both surface feeding and bottom feeding larvae in freshwater swamps and marshes, salt and freshwater lagoons, salt marshes, mangrove swamps, estuarine areas, woodland pools, or any natural water-holding features; in both open water situations or where water is obscured by vegetation. In fact anywhere where mosquito breeding is a current or potential problem.

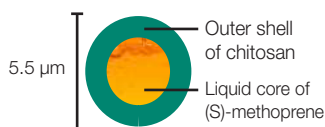


### WHAT IS INTELLIGENT GRANULAR MICROENCAPSULATION TECHNOLOGY™?

We take a grain of sand and coat it with layer of gypsum and carbon containing our *Controlled Release Active Micro-capsules™* (CRAM-capsules). The CRAM-capsules are 5.5 µm in diameter with an outer shell of chitosan and a liquid core of the active ingredient (S)-methoprene.

CULITHOR contains 12 g/kg (S)-methoprene, three times as much as any other granular product. This provides for an application rate of 1/3 that of other products in the market. This ensures application is more economical, quicker and more effective; together with providing lower transportations costs.

#### Controlled Release Active Micro-capsules™ (CRAM-capsules)



#### Sand grain

Inner core consists of a single grain of sand.

#### Gypsum and carbon

Outer layer of gypsum and carbon which contains the CRAM-capsules.

#### INTELLIGENT GRANULAR MICROENCAPSULATION TECHNOLOGY™



### TWO METHODS OF APPLICATION

#### METHOD 1

##### Added to flood prone areas

CULITHOR can be applied prior to flooding by rain or tides. It will not be triggered into action until the water floods over it. Since the CRAM-capsules are protected by UV-filters, the CULITHOR will remain viable for up to three months, even in strong sunlight.

#### METHOD 2

##### Directly to water bodies

CULITHOR can be added directly to the water where the mosquitoes are breeding for quick and effective control.





# CULITHOR™

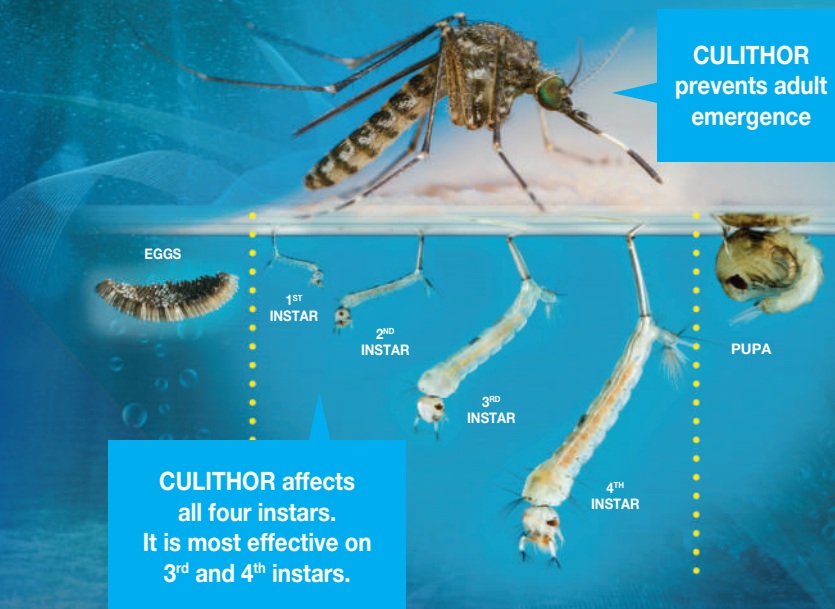
GRANULAR MOSQUITO GROWTH REGULATOR



## CULITHOR MODE OF ACTION

CULITHOR works by mimicking the presence of natural juvenile hormone in the mosquito larvae. Consequently CULITHOR prevents the emergence of adult mosquitoes, including common *Aedes*, *Anopheles*, *Culex* and *Ochlerotatus* spp from treated sites. Treated larvae continue to develop normally to the pupal stage, after which they fail to emerge.

CULITHOR has sufficient activity to be effective against existing broods when applied to any larval stage at recommended rates. Third and fourth larval instars are more susceptible to the effects of (S)-methoprene than early stage instars. CULITHOR has no effect on mosquitoes which have reached the pupal or adult stage of development at time of treatment.



## DOUBLE TRIGGER RELEASE MECHANISM - HOW CULITHOR WORKS DIFFERENTLY

CULITHOR UNIQUELY EMPLOYS A **DOUBLE TRIGGER RELEASE MECHANISM** TO PROVIDE EFFECTIVE MOSQUITO CONTROL OVER SEVERAL MONTHS.

### TRIGGER 1

#### 1 Water Release of CRAM-capsules

When in water, the *CULITHOR Intelligent Granules*™ sink to the bottom, weighed down by their inner high mass core (sand).

The outer gypsum layer then slowly dissolves, gradually releasing the *Controlled Release Active Micro-capsules*™ (CRAM-capsules).

### TRIGGER 2

#### 2 Slow Release of Active by Elution

The secondary release is through a process of elution.

The CRAM-capsules slowly rise to the surface, releasing the active ingredient over time to ensure even distribution throughout the water body and improved long-term control of both bottom feeding and surface feeding mosquito larvae.



### CULITHOR™ KEY BENEFITS

<b>Water Release</b>	CULITHOR remains stable even in strong sunlight allowing use in tidal areas and on flood plains. It is only triggered into action when immersed in water. <b>TRIGGER 1 – Water Release of CRAM-capsules.</b>
<b>Slow Release</b>	The <i>CULITHOR Intelligent Granules™</i> release the <i>Controlled Release Active Micro-capsules™</i> (CRAM-capsules) which gradually rise to the surface as they slowly release the active ingredient. <b>TRIGGER 2 - Slow Release of Active by Elution.</b>
<b>Long-term Residual</b>	The <i>Double Trigger Release</i> mechanism can provide for control over several months.
<b>Good Distribution in the Water</b>	The <i>CULITHOR Intelligent Granules</i> with CRAM-capsules ensure an even distribution of the active through the water body.
<b>High Active Loading</b>	CULITHOR has three times more (S)-methoprene compared to any other granular product on the market. This means you use 1/3 as much per hectare. Meaning lower application and transport costs.
<b>Easy Application</b>	CULITHOR can be applied with conventional ground or aerial application equipment. The high mass core of the <i>CULITHOR Intelligent Granules</i> ensures targeted delivery, even in adverse weather conditions.
<b>Improved Safety</b>	The outer chitosan shell of the CRAM-capsules is non-digestible by mammals.

### TECHNICAL SPECIFICATIONS

<b>Product Name:</b>	CULITHOR Granular Mosquito Growth Regulator
<b>Type:</b>	Biopesticide – Insect Growth Regulator
<b>Active Constituent:</b>	12 g/kg (S)-methoprene
<b>Registration No.</b>	10919 of Act No. 36 of 1947
<b>Formulation:</b>	Ready-to-use <i>Intelligent Granular Microencapsulation Technology™</i> .

<b>RATE</b>	<b>CRITICAL COMMENTS</b>
<b>1.0 kg/ha</b>	Use this rate when water is shallow (<30 cm), clean and mosquito larval numbers are low (<10 per dip).
<b>1.3 kg/ha</b>	Use this rate when water is deep (>30 cm), vegetation and/or pollution are present, and/or mosquito larval numbers are high (>10 per dip).
<b>1.7 kg/ha</b>	This rate should only be used when the major target mosquito species is <i>Culex sitiens</i> .

# ENSYSTEX™

LEADING INNOVATION IN PEST MANAGEMENT

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