ICEC 2013

International Chemical Ecology Conference 2013

19 – 23 August 2013
Melbourne Convention & Exhibition Centre
Victoria Australia
www.icec2013.com.au

International Society of Chemical Ecology, Inc.

Asia-Pacific Association of Chemical Ecologists

# Developing a Chlorfluazuron Based Insecticide Bait for Multiple Termite Species

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## ABSTRACT

The pressure for better environmental stewardship is forcing the chemical industry to look for safer formulations and much safer application techniques. Insecticidal baits are unique formulations which have combined information from insect sensory physiology, gustatory chemistry, semiochemicals and many more. Baits are target specific and allow easy application, thus being recognized as a safer alternative to liquid sprays. This article presents a chlorfluazuron based termite bait and a baiting system which addressed a number of behavioral aspects of termite feeding behavior such as palatability of bait, moisture control, choice of the active ingredient, large food source and no disturbance while bait supplementing. This eventually resulted in a wider acceptance of the bait to a number of termite species across Asia Pacific.


1. Requiem Bait preparation


2. A colony being baited


3. Requiem in the Above-ground Station


4. Termite feeding on the bait


5. Feeding by *Coptotermes* sp


6. Feeding by *Microcerotermes* sp


7. Feeding by *Macrotermes* sp


8. Colony Elimination


9. Dead Queen Termite

## LIST OF TERMITE SPECIES SUCCESSFULLY ACCEPTED FEEDING ON THE BAIT

- *Coptotermes formosanus*
- *Coptotermes acinaciformis*
- *Coptotermes frenchi*
- *Coptotermes gestroi*
- *Coptotermes havilandi*
- *Coptotermes curvignathus*
- *Coptotermes treviens*
- *Coptotermes michaelseni*
- *C. acinaciformis raffrayi*
- *Schedorhinotermes spp*
- *Heterotermes ferox*
- *Nasutitermes exitiosus*
- *Nasutitermes luzonicos*
- *Microcerotermes spp*
- *Microtermes spp*
- *Porotermes adamsoni*
- *Reticulitermes spp*
- *Macrotermes gilvus*
- *Globitermes sulphureus*
- *Microcerotermes losbanosensis*

| DEVELOPMENT OF ENSYSTEX REQUIEM TERMITE BAIT | |
|---|---|
| **Bait and Baiting System Characteristics** | **Details** |
| **Slow acting active ingredient** | 0.1% chlorfluazuron<br>A chitin synthesis inhibitor with high potency |
| **Processed alpha-cellulose bait matrix** | Easy to control bait moisture and manipulate consistency. Long lasting in the field and easy to prepare and transport. |
| **Large aggregation devices** | In-ground Stations<br>Above-ground Stations<br>It has been shown that termite foragers discriminate smaller volumes of bait wood in favor of larger volume by abandoning them (Lenz *et al*, 2000). This behavior would make baits presented in a small amount or contained within a smaller station less attractive to termites. |
| **Suitable Timber interceptors** | *Eucalyptus delegatensis* |
| **Evaluated for all economically important species** | Australia<br>Philippines<br>Malaysia<br>Thailand<br>Hongkong<br>Singapore<br>Indonesia<br>India<br>China<br>Japan<br>French Polynesia<br>New Caledonia<br>Pakistan |

## CONCLUSION

Baiting termites theoretically looks easy, but developing perfect bait and a complete baiting system remains a challenge. Ensystex Requiem Termite bait and baiting system successfully overcame a number of intricate termite behavioral cues, including general feeding behavior, food presentation, food quality, the shape and size of food source, food supplementation and moisture in the food. This helped its acceptance to a wide variety of economically important termite species.

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