



Studies on Microbial Formulation (*Metarizium Spps*) for Termite Management in Buildings (SSP-188)

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Metarhizium anisopliae, formerly known as *Entomophthora anisopliae* is a fungus that grows naturally in soils throughout the world and causes disease to various insects by acting as a parasite. *Metarhizium anisopliae* strain infects insects, primarily beetle larvae. It has been approved as a microbial pesticide. Many strains of *Metarhizium anisopliae* have been isolated worldwide from insects, nematodes, soil, river sediments, and decomposing organic material. No harm is expected to humans or the environment, when pesticide products containing *Metarhizium anisopliae* are used according to label instructions. In the present project, three tests is to be carried out to study the effectiveness of the product, of which two tests are completed.

Modified Ground Board Test

In a modified ground board method; known concentration and volume of chemical solution (3 litre/m²) was applied to the surface of 43 sq.cm. of soil that has been cleared of vegetation. (For Formulation both F-1 & F-2: A:@45 gm powder per slab (03 nos), B:30 gm powder per slab, C:75 gm powder per slab and D:50 gm powder per slab). After the chemical has been soaked into the soil, it was covered with polyethylene vapour barrier. A 10 cm. diameter capped plastic pipe was placed in the centre of the soil to serve as an inspection port. The vapour barrier was removed from inside the pipe and a short (5 x 5 x 5mm) wooden block (mango wood) was placed in the pipe which rests on the soil surface. The soil and vapour barrier surrounding the inspection port was covered with a 2.5 cm layer of concrete. Wood placed in the pipe was examined at regular intervals of six months. (Photo 18-19).

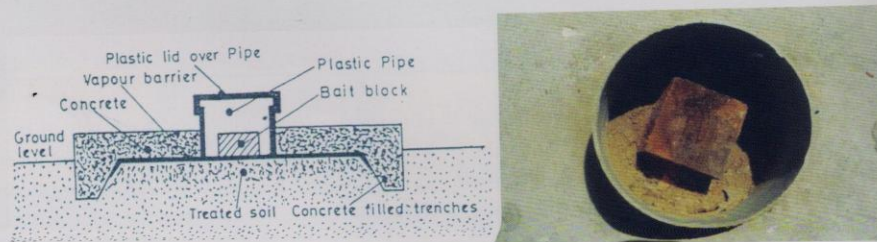


Photo 18-19 : Line diagram and actual site photo of Modified Ground Board Test showing test block



Photo 20 : Modified Ground Board Test at Pune

The experiments were started in different climatic and soil conditions in Roorkee, Dehradun and Pune. Recording of observation is going on as per schedule programme.

Experimental anti-termite treatment in staff quarters

About 1000m² covered area of buildings was treated with each of the formulation of Metarhizium. About 250m² covered area was treated with each dose rate mentioned above. The methodology used for post construction treatment of termite - infested houses was in accordance with Code of Practice for Anti-Termite Measures in Buildings Part-III, Post Construction Measures, IS:6313-1981. The treatment was done at Roorkee only. In order to

treat the building to control the subterranean termite attack, the aim was to provide a continuous barrier of pesticide between soil and building. It was somewhat in the same way as per site pre-treatment. However, in the post-construction treatment due to presence of floors, walls, aprons, garages etc., the task was a bit difficult. To achieve the goal the holes were drilled through the floor to inject pesticidal solution, so that it should reach the soil under the building. According to the observations recorded, some termite infestations were observed in two buildings after one rainy season. It indicates that the formulations works well during first six months after that slowly its effectiveness decreases. Further, recording of observation is going on as per schedule programme.