

TOXICITY OF ETHANEDINITRILE (C₂N₂) TO TIMBER OR WOOD RELATED INSECT PESTS

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Range finding studies on the toxicity of ethanedinitrile to three species of timber (or wood related) Coleoptera were carried out. The species were *Rhyzopertha dominica* Fabricius, *Anoplophora glabripennis* Motschulsky (Asian longhorned beetle) and *Cryptotermes brevis* Walker.

Using exposures to ethanedinitrile of 1.0mg L⁻¹ for 6 hours at 20-25°C, the adult stage of *Rhyzopertha dominica* was completely killed. All larval stages of *Anoplophora glabripennis* were killed at 11 mg L⁻¹ and workers of *Cryptotermes brevis* were killed at 4.0mg L⁻¹.

Control of immature stages of *Rhyzopertha dominica* required a concentration of 1.5mg L⁻¹ of ethanedinitrile for 24 hours at 25°C.

During these 6 and 24 hours exposures, the decay of ethanedinitrile in the fumigation chamber was 4-7% in all cases. The levels of carbon dioxide (CO₂) produced by insect respiration was in the range of 0.2-0.35% for the 6 hour exposure and 0.7% for the 24 hour exposure.

In general, ethanedinitrile showed high toxicity to all immature and adult stages tested and is, in this respect, more toxic than methyl bromide.