VERTICAL DISTRIBUTION OF MARINE BORERS ON TREATED AND UNTREATED TIMBERS EXPOSED IN MTONGWE JETTY, MOMBASA HARBOUR – KENYA

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Abstract

Studies were undertaken to provide information about the activities of marine borers in Mtongwe Jetty- Mombasa harbour, marine borer species present and the service lives of treated and untreated *Pinus patula,* (Schlecht), *Eucalyptus saligna* (Baker et Smith) and *Cupressus lusitanica* (miller) used in the marine environment. An indication to the type of treatment necessary to protect such timber adequately, and performance of CCA (Copper chrome arsenate), Creosote and 2% w/v Pyrethrin (Coil Products Ltd.) wood preservatives at high and low loadings is also provided.

15cm x 10cm x 2.5cm clear sapwood samples of the three wood species were pressure treated with creosote, pyrethrin and CCA to high and low loadings. These were then strung in ladder like frames using nylon twine and suspended vertically below Mtongwe Jetty pontoon, Mombasa harbour in such a way that the top most block was 25cm and the bottom block 5m below the water surface at low tide.

Observations were made on the incidence, extent and severity of marine borer attack following the technique of Bobat (1995). Marine borer specimens were collected from test blocks and identified at Kenya National Museums. Hydrographical conditions at the test site were measured.

Analysis indicated no significant difference in the vertical extent, severity and incidence of attack amongst the wood species. Significant differences existed amongst preservative types and loadings. Untreated test blocks were completely destroyed in seven months indicating the severity of attack. Weight losses ranged from 36.84% to 42.08%. Blocks treated to low loadings with CCA (2.28 to 2.69)Kg/m^3 were lightly attacked with weight losses ranging from 12.56% to 13.68%. Blocks subjected to low loading of pyrethrin (0.78 to 1.19)kg/m^3 were heavily attacked with weight losses ranging from 31.79% to 36.33%. Blocks treated with low loadings of creosote (38.10 to 43.20)kg/m^3 were moderately attacked with weight losses ranging from 16.38% to 17.65% hence an indication to a better performance of CCA as compared to Creosote and pyrethrin. Wood blocks treated with high loadings of CCA (13.72 to 18.37)kg/m^3 and Creosote (126.58 to 176.32)Kg/m^3 remained free from attack throughout the whole exposure period of seven months. Blocks treated with high loadings of pyrethrin (1.97 to 3.21)Kg/m^3 were moderately attacked.

Comparative performance showed that CCA performed better than the other wood preservatives in the marine environment. *Eucalyptus saligna* gave an indication of a better service life if it is properly treated upto $48kg/m^3$ CCA or $400kg/m^3$ Creosote. *Martesia striata* (linne) *Teredo furallatus,*(Fish) and *Lyrodus pedicellatus* (Turner) are the active borers in Mombasa harbour.