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FACULTY OF INDUSTRIAL TECHNOLOGY
DEPARTMENT OF TEXTILE TECHNOLOGY

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*Formulation Of An Economic Antimicrobial Finish
For Agricultural Twines Manufactured At Twine
And Cordage*

ONIAS CHIHWAI

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A DESERTATION SUBMITTED IN PARTIAL FULFILMENT OF A BACHELOR OF
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Abstract

Microbial attack poses a great threat to the functionality of cellulosic textiles. The loss in strength followed by complete degradation of the textile is a major problem in industrial textiles made of cellulosic fibres. Twine and Cordage is a company that produces cotton agricultural twines for tobacco tying and hanging as well as other agricultural applications. These twines are finished using a mixture of starch and sodium benzoate. This project investigated the effectiveness of this finish when in use and possible ways of improving. The British standard tests of 2003 and 1992 (BSEN: 2003 and BS6085:1992) were used to test the effectiveness of this finish. The results revealed that the hygroscopic nature of the finish increases the vulnerability of the twines to microbial attack. With due consideration of legislation as well as other factors that are necessary in formulating a finish as well as economic aspects, an increase in the level of sodium benzoate and an addition of wax was proposed as a way of improving the finish. The only aspect that was not looked at due to time constraint was the optimal proportions that are necessary, however the suggestion was made after thorough analysis statistically as well as the experimental evidence from the tests which showed the sudden decline in strength and a premature attack could be combated by reducing the hygroscopicity of the finish.