

THE INFLUENCE OF PARASITIC NEMATODES ON  
THE POST-HARVEST QUALITY OF KEMAF (HIBISCUS  
GAMBIRIENSIS L.) PLANT

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HARVEST QUALITY OF KENAF (*HIBISCUS CANNABINUS L.*) PLANT

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## DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

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## ABSTRACT

Nematode is a pest which caused a serious problem to kenaf production in kenaf field at Telaga Papan, Merang, Terengganu. This problem caused high loss of kenaf production in pilot project under National Tobacco Board (LTN). In this study, the hypothesis that root-knot nematode was a constraint to the field production of kenaf was investigated. The natural population of root-knot nematodes was tested by assaying the infected kenaf field soil. The effects of plant post harvest physiology also being determined. By using the infected soil, kenaf plant was planted until their maturity stage to see the effect of their presence. The treated soil used as control soil to be as a comparison to infected soil. The growth rate was taken once every month. After three month, when the plant harvested the diameter of basal discs, moisture loss and microscopic observation have been done to the root. For the postharvest evaluation, the height of kenaf shows slightly differences where the infected soil is lower in height. The basal diameter of kenaf in infected soil is ununiformly form and high moisture loss which is more than 55% than control soil. The root of kenaf in soil infected by nematode is stunted with galls and egg mass on it but in treated soil, the root grows healthy. From the microscopic observation, the presence of *Meloidogyne spp.* had been determined based on their basic morphology.

## ABSTRAK

Nematode adalah perosak yang menyebabkan masalah yang besar terhadap penghasilan kenaf di Telaga Papan, Merang, Terengganu. Masalah ini membawa kepada kehilangan hasil kenaf dalam projek permulaan dibawah Lembaga Tembakau Negara. Dalam kajian ini, hipotesis bahawa nematod yang menyebabkan pembengkakan akar adalah penghalang yang mengurangkan hasil kenaf telah disiasat. Populasi semulajadi nematod dikaji dengan menguji tanah dari ladang yang telah diserang. Kesan nematod terhadap hasil lepas tuai kenaf juga dikenalpasti. Dengan menggunakan tanah yang telah dijangkiti, kenaf ditanam sehingga matang. Tanah yang telah dirawat digunakan sebagai kawalan untuk membuat perbandingan kadar pertumbuhan pokok kenaf diambil sebulan sekali. Selepas tiga bulan, apabila pokok telah dituai, diameter batang, kadar kehilangan air dan pemerhatian terhadap akar kenaf dibuat. Dalam penilaian lepas tuai kenaf, ketinggian kenaf menunjukkan sedikit perbezaan dimana kenaf dalam tanah yang dijangkiti adalah lebih rendah. Diameter kenaf dalam tanah dijangkiti terbentuk secara tidak sekata dan peratus kehilangan air adalah tinggi sebanyak 55% berbanding kawalan. Akar kenaf dalam tanah dijangkiti nematod adalah terbantut dengan kehadiran bengkakan dan kantung telur manakala akar dalam tanah kawalan tumbuh dengan sihat. Daripada pemerhatian secara mikroskopik, kehadiran *Meloidogyne spp.* telah dikenalpasti.