

THE STUDY ON THE INFLUENCE OF PLANT PARASITIC  
NEMATODES IN KENAF FIELD ON MAIZE (*Zea mays* L.)  
POSTHARVEST QUALITY

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FACULTY OF AGRICULTURE, TECHNOLOGY AND FOOD SCIENCE  
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KENAF FIELD ON MAIZE (*Zea mays L.*)  
POST-HARVEST QUALITY

by  
Aina Maryam Binti Zakaria

Research Report submitted in partial fulfilment of  
the requirements for the degree of  
Bachelor of Science in Agrotechnology (Post Harvest Technology)

DEPARTMENT OF AGROTECHNOLOGY  
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## ENDORSEMENT

The project report entitled **The Study of the Influence of Plant Parasitic Nematodes in Kenaf Field on Maize (*Zea Mays L.*) Post-Harvest Quality** by **Aina Maryam Binti Zakaria**, Matric No **UK 15243** has been reviewed and corrections have been made according to the recommendations by examiners. This report is submitted to the Department of Agrotechnology in partial fulfillment of the requirement of the degree of Science Agrotechnology (Post-Harvest Technology), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu.



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Date: 21<sup>st</sup> April 2010

## DECLARATION

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

Signature :  .....

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## ABSTRACT

A kenaf field at Telaga Papan, Kuala Terengganu is facing serious problem of low yield outcome believed caused by plant-parasitic nematodes infestation. Plant-parasitic nematodes is a pest that is often overlooked by us as other problems since it mimic other symptoms of diseases and also nutrient deficiency. The objectives of this study is to determine the presence of nematodes in kenaf field from Telaga Papan soil and its effects to the post-harvest quality of maize. Sample soil was taken from Telaga Papan to proceed with bioassay procedures to prove the presence of nematodes in the soil and using the same sample soil, maize was planted to evaluate the post-harvest quality of maize after affected by nematodes. Discovered from this research project is maize from F1 Hybrid cultivar is resistance to root-knot nematodes but not to lesion nematodes since the roots of maize is lacking fine roots and black lesion marks can be observed. The maize post-harvest quality is terribly affected by nematodes because the maturity index of the produce varies from the control produce because nematodes does cause premature aging of produce. With the existence of this project, farmers should beware and never underestimate the effects of nematodes to crops worldwide.

## ABSTRAK

Sebuah padang tanaman kenaf di Telaga Papan, Kuala Terengganu menghadapi masalah serius berhubung hasil tanaman yang rendah dipercayai akibat infestasi nematod parasit tumbuhan yang teruk. Nematod parasit tumbuhan adalah perosak yang sering tidak dipandang sebagai ancaman memandangkan simptom-simptom yang dizahirkan menyerupai jangkitan penyakit dan kekurangan nutrien. Objektif kajian ini adalah untuk membuktikan kehadiran nematod di dalam tanah padang tanaman kenaf dari Telaga Papan dan untuk membuat pemerhatian keatas hasil lepastuai jagung akibat jangkitan nematod. Tanah sampel dari Telaga Papan diambil dan kajian diteruskan dengan kajian saintifik untuk memastikan kewujudan nematod di dalam tanah sampel dan dengan tanah dari sumber yang sama, tanaman jagung ditanam untuk meneruskan dengan pemerhatian hasil lepastuai jagung setelah dijangkiti nematod. Penemuan daripada kajian ini adalah jagung daripada kultivar F1 Hybrid resistan terhadap nematod puru akar tetapi tidak kepada nematod lesion memandangkan akar pokok jagung dari tanah sampel kurang memiliki akar yang sihat dan lecur-lecur hitam boleh diperhatikan. Hasil lepastuai jagung pula terjejas teruk akibat nematod kerana indeks kematangan buah berbeza diantara hasil tanah sampel dan juga tanah kawalan kerana nematod boleh menyebabkan hasil pramatang. Dengan adanya projek ini, petani di seluruh dunia sepatutnya lebih berhati-hati dan tidak memandang rendah kesan yang boleh disebabkan oleh nematod.