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Antifungal study of garlic (Allium sativum) extract on the Fusarium spp. isolated from muskmelon fruit rot / Gan Chie Giap.

Lihat sebelah

ANTIFUNGAL STUDY OF GARLIC (*Allium sativum*) EXTRACT ON THE *Fusarium spp.* ISOLATED FROM MUSKMELON FRUIT ROT

By
Gan Chie Giap

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

DEPARTMENT OF AGROTECHNOLOGY
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
2010

ENDORSEMENT

The project report entitled **Antifungal Study of Garlic (*Allium sativum*) Extract on the *Fusarium spp.* Isolated from Muskmelon with Fruit Rot** by **Gan Chie Giap,** Matric Number **UK 15866** 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 degree of Science in Agrotechnology (Post Harvest Technology) Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu.

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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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ACKNOWLEDGEMENT

First and foremost, I like to express my deepest gratitude and appreciation goes to my supervisor, Miss Siti Nordahlawate bt Mohamed Sidique for his great support, valuable advice, encouragement, guidance and patience. I also would like to express thankful to my co-supervisor Miss Roshita bt Ibrahim for his meaningful comments, suggestion and review of my project.

I kindly thank to Ms Azlin for the *Fusarium* culture and their guidance, useful discussions and assistance during laboratory preparation. My sincere thanks also extended to all Postharvest Laboratory staff who help me to success my final year project especially Mr Ruzairie, Mr Fauzi, Mr Redhuan, Madam Maizatul, Madam Rafidah and Ms Iliani.

Finally, I would like to thank my family especially my beloved father, Mr Gan Gim Chuan for all the encouragement, support, and financial given to me during my study at University Malaysia Terengganu.

ABSTRACT

Muskmelon is the common name for botanical varieties of *Cucumis melo L.* The botanical group includes cantaloupe, honeydew, and casaba. Muskmelon fruit rot has been detected in almost plantation area and *Fusarium* species had been identified involved in one of the most important postharvest diseases of muskmelon. This study was employed to determine the effect garlic extraction on causal organisms and the Minimal Inhibitory Concentration (MIC) of *Fusarium Solani* and *Fusarium Oxysporum.* Three types of in-vitro techniques were tested (Paper disc diffusion, well-agar technique and spore suspension techniques). Results showed that 5mg/ml of garlic extract was proven can inhibit both of the fungi. The MIC of *F. Solani* and *F. oxysporum* were 4.75 mg/ml and 4.5 mg/ml respectively. As conclusion, garlic has a potential as natural product to inhibit the *Fusarium* species isolated from muskmelon with fruit rot disease.

ABSTRAK

Cucumis melo L. atau dikenali dengan nama botanical iaitu tembikai terdiri daripada tembikai susu, 'cantaloupe dan 'casaba'. Penyakit reput buah telah dikesan pada setiap kawasan penanaman buah tembikai. *Fusarium* spesies telah dikenalpasti punca kepada penyakit lepastuai bagi buah tembikai. Kajian ini dijalankan untuk mengkaji kesan kepekatan ekstrak bawang putih terhadap perencatan *Fusarium* spesies dan menentukan kepekatan perencatan minimum (MIC) bagi *Fusarium solani* dan *Fusarium oxysporum*. Tiga jenis teknik in-vitro telah digunakan (Teknik sebaran kertas cakera, teknik 'agar-well' dan teknik ampaian inokulum). Keputusan menunjukkan ekstrak bawang putih pada kepekatan 5mg/ml dapat merencat kedua-dua kulat tersebut. Penentuan kepekatan perencatan minimum bagi *Fusarium solani* dan *F. oxysporum* adalah 4.75 mg/ml dan 4.5 mg/ml masing-masing. Sebagai kesimpulannya, bawang putih mempunyai potensi sebagai produk semulajadi untuk merencatkan pereputan pada buah tembikai disebabkan oleh *Fusarium*.