AETIOLOGICAL STUDIES OF *Fusarium* spp. ASSOCIATED WITH NECROTIC SPOT DISEASE OF DRAGON FRUIT (*Hylocereus polyrhizus*) AND THE POSTHARVEST TREATMENT STUDIES ON SANITATION AND STORAGE

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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.

Signature : ....

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ABSTRACT

This study was conducted to identify the causal organism of necrotic spot disease on *Hylocereus polyrhizus* and determine the effect of sanitation treatment and storage temperature on fruit physiological and microbial changes. The fruit with necrotic spot had been collected from Johor, Malacca and Terengganu. Thirty-two of *Fusarium* species were isolated from the symptom with 40.63% of *F. solani,* 28.13% of *F. proliferatum,* 21.88% of *F. semitectum* and 9.38% of *F. oxysporum*. Only *F. solani* and *F. proliferatum* were confirmed pathogenic after inoculation with disease severity index (DSI) varied from 0.11 to 4.67 for *F. solani* and 0.11 to 3.69 for *F. proliferatum*. Thus, *F. solani* are more pathogenic compare to *F. proliferatum*. The sanitation treatment and storage temperature were involved in physiological and microbial changes of the fruit. For sanitation treatment, sodium hypochlorite treatment and distilled water treatment showed no significance differences (p>0.05) for chemical and physical aspects compare to unwashed fruits. While for the microbial infection, sodium hypochlorite 200ppm can reduce the microbial growth and act as a good sanitizing agent compare to distilled water and unwashed. The storage temperature also can prolong the shelf-life of dragonfruit. Fruit stored at room temperature can maintain the freshness for 6 days but result showed that it can be extended until 14 days for 14°C and 21 days for 6°C.