THE EFFECT [illegible] HARVESTING DATES ON SHELF LIFE OF TOMATO (Lycopersicon esculentum)

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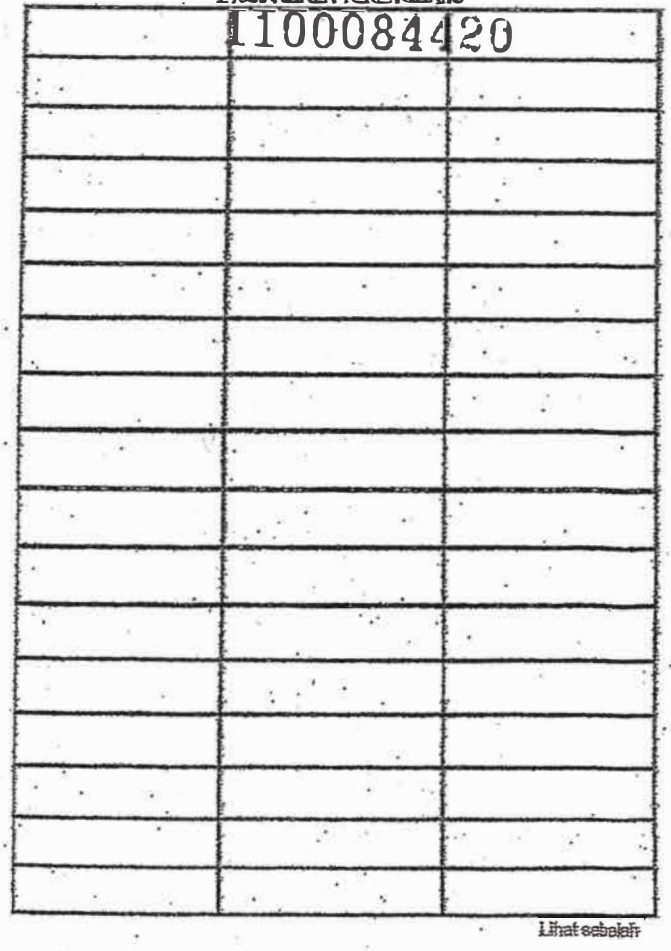
2010

The effect of different harvesting dates on shelf life of tomato (Lycopersicon esculentum) / Nur Shafarina Mohd Ridzuan.



THE EFFECT OF DIFFERENT HARVESTING DATES ON SHELF LIFE OF TOMATO (*Lycopersicon esculentum*)

By
Nur Shafarina Binti Mohd Ridzuan

Research Report submitted in partial fulfillment of
the requirements for the the degree of
Bachelor of Science Agrotechnology (Postharvest Technology)

DEPARTMENT OF AGROTECHNOLOGY
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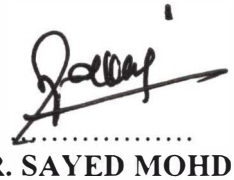
ENDORSEMENT

The project report entitle The **Effect Of Different Harvesting Dates On Shelf Life of Tomato (*Lycopersicon esculentum*)** by **Nur Shafarina Binti Mohd Ridzuan** Matric No. **UK 16335** 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 Bachelor of Science Agrotechnology (Postharvest 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 quotation and summaries which have been duly acknowledged.

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ABSTRACT

The effect of different harvesting dates on the shelf life of tomato (*Lycopersicon esculentum*) was investigated. The harvesting date was referred to first harvesting (one week earlier from the actual/recommended harvesting date), second harvesting (60 days after flower tagging/ recommended harvesting date) and third harvesting (one week after recommended harvesting date). After harvest, the tomatoes were analyzed and stored at ambient temperature for 9 days. The analyses parameters were measured every 3 day interval for total soluble content (TSS), vitamin C content, pH value, firmness and color changes of tomato skin. The experimental means were compared by analysis of variance (ANOVA) One-Way using SPSS 16.0 statistic software. Where differences were analyzed ($P<0.05$), use Tukey test to compare the means between 3 harvesting dates. From the results, fruits of second harvesting date had higher content of soluble solid, vitamin C and pH value compared to the first and third harvestings. However, first harvesting had higher value of firmness because the fruits were immature and the skin was firmer. While, color changes showed that the first harvesting fruits were greenish in color on day 0 and gradually changed to red over the storage at ambient temperature. Fruits of the second harvesting had lighter red skin on day 0 and gradually changed to dark red at day 9. Mean while, the third harvesting had reddish skin on day 0 and changed to brownish red at day 9. So, the best harvesting date for the best quality of tomato for storage was the second harvesting.

ABSTRAK

Kesan perbezaan waktu tuaian terhadap jangka hayat buah tomato *(Lycopersicon esculentum)* disiasat. Waktu tuaian merujuk kepada tuaian pertama (seminggu awal daripada tuaian yang disyorkan), tuaian kedua (60 hari selepas penandaan bunga/ tuaian yang disyorkan) and tuaian ketiga (seminggu selepas tuaian pertama). Selepas dituai, tomato tersebut dianalisis untuk hari pertama dan selebihnya akan disimpan pada suhu ambient untuk analisis hari ketiga, keenam dan kesembilan. Antara parameter-parameter yang diukur adalah kandungan pepejal terlarut (^{0}Brix), kandungan vitamin C, nilai pH, kekerasan buah (g) dan perubahan warna kulit buah tomato. Nilai purata yang didapati daripada eksperimen ini dibandingkan menggunakan sistem perubahan analisis, ANOVA satu jalan menggunakan SPSS 16.0 oleh perisian computer berstatistik. Apabila terdapat perbezaan ($P<0.05$), ujian Tukey digunakan untuk membandingkan purata di antara ketiga-tiga tuaian. Berdasarkan kepada keputusan yang diperoleh, buah daripada tuaian kedua mengandungi kandungan gula, vitamin C and nilai pH yang paling tinggi, walaubagaimanapun, nilai kekerasan (g) bagi tuaian pertama menunjukkan nilai tertinggi kerana buahnya masih muda dan tektur isinya masih keras. Sementara itu, perubahan warna menunjukkan bahawa buah hasil tuaian pertama adalah berwarna hijau pada hari 0 dan warnanya berubah kepada merah secara beransur-ansur semasa disimpan pada suhu ambient. Buah dari tuaian kedua mempunyai warna merah terang pada hari 0 dan secara beransur-ansur berubah kepada warna merah gelap pada hari 9. Buah yang dituai pada tuaian ketiga pula mempunyai warna merah pekat pada hari 0 dan bertukar kepada merah kecoklatan pada hari kesembilan. Jadi, waktu tuaian yang terbaik untuk mendapatkan buah yang berkualiti semasa dalam penyimpanan adalah pada tuaian kedua.