DEDICATION

To my Great Mother and my Sister

and to my Father Soul

ACKNOWLEFGEMENTS

I would like to express my most gratitude to my supervisor Dr. ELnougomi Abdel Gadir for his thought ful guidance through out all stages of the present study .

I would also like to express my thanks to my great mother and my sister for their encouragement and daily support not only during this research but also throughout my

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ABSTRACT

Mechanical Pollination of date palms was mostly developed where labor is expensive and not always available . It is estimated that Labor must Climb a date palm several times from the time of pollination through to crop harvesting. Which may cause breakage or death some time.

The present Pollinator was designed to pollinate date palm trees have rage between (3-10) m.

The designed Pollinator was fabricated from local materials, at Agricultural Engineering Department workshop of Agricultural Studies College - Sudan University of Science and Technology. It was checked at the workshop, and tested at the orchard of Agricultural Studies Collage, by compared with manual pollination.

The results indicated that: -

- Dates yield of manual pollination was 95%, while that of mechanical Pollination was 99.2% compared to the average time ratio for one date palm tree pollination manually and mechanically was (13:1) minuets.
- The average quantity of pollen grains used for one date palm tree pollinate manually was 50 grams, while that used for mechanical pollination was 14 grams.
- The total conclusion cost of one equipment was found to be about 300 Sudanese pounds (SDG)

الخلاصة

التلقيح الميكانيكي هو أسلوب استحدث في العالم لنخيل التمر حيث ترتفع تكاليف العمالة ولا تكون متوفرة على الدوام كما يتعين للعامل أن يتسلق النخلة عدة مرات من وقت التلقيح حتى وقت الجني ويتعرض للكسور أو الموت أحيانا. لذلك صممت هذه الآلة لتقوم بعملية التلقيح للنخل الذي يبلغ طوله من (3 – 10) متر. وتم تصميم وتصنيع هذه الآلة من مواد محلية بسيطة بورشة الهندسة الزراعية كلية الدراسات الزراعية جامعة السودان للعلوم والتكنولوجيا.

ولقد اختبرت هذه الآلة في المعمل. كما إختبرت ايضاً في بستان الفاكهة بكلية الدراسات الزراعية جامعة السودان للعلوم والتكنولوجيا، بإجراء التلقيح يدوياً والياً وتم الحصول علي النتائج الآتية: -

- نسبة إنتاجية البلح الملقح يدوياً و والبلح الملقح آلياً (95%ـ ،99.2%) على التوالي.
- متوسط زمن تلقيح النخلة يدوياً و وزمن تلقيح النخلة آلياً (13،1) دقيقة على التوالي.
- متوسط كمية حبوب اللقاح المستهلكة يدوياً والمستهلكة آلياً للنخلة (50،14) جرام على التوالي.
- تقدر التكلفة الكلية لتصنيع الآلة بحوالي 300 جنيه سوداني فقط .

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