

Dedication

To my father (AHMED)

Mother (AMNA)

Sisters(MONA.AMANY.HOWIDA)

Brothers(ALSADIG.ANAS. EMAD.HASHIM)

Friends (AFRAA & REHAB)

To all I love

Walla

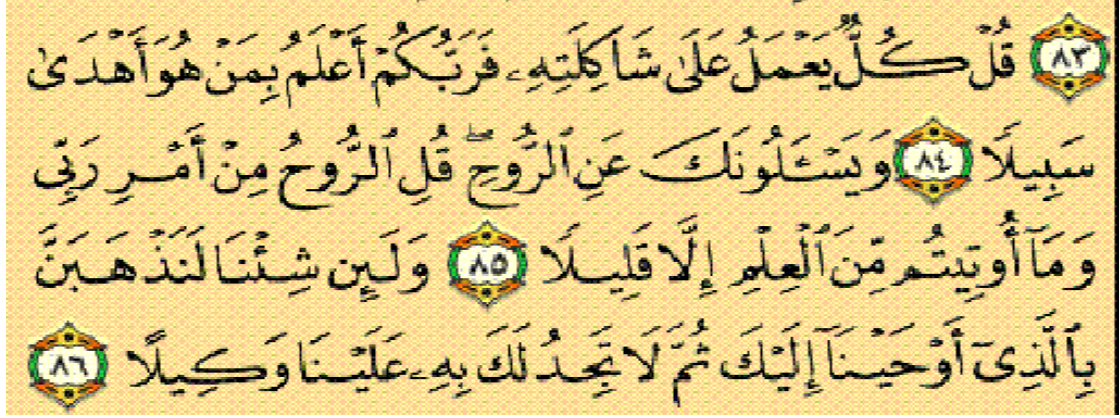
Acknowledgement

Praise be to Allah who gave me health, strength and patience to conduct this work. I would like to express my gratitude and appreciation to my main supervisor Dr. **Maysara Ahmed Mohammed** for his consistent supervision and patience, invaluable advice, and guidance throughout the course of study.

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بسم الله الرحمن الرحيم



(سورة)

صدق الله العظيم

الخلاصه

القائم علي بيئه 0 (APAMM) تم إعداد برنامج حاسوبي لادارة الاليات الزراعية او (7) او الانظمة الحديثه 0 وهو برنامج سهل الاستخدام كتب علي برنامج (X) ويندوز لادارة الاليات 0 يتيح للمستخدم ادخال البيانات المطلوبه لمعالجتها. visual basic. حسابيا كما يمكن المستخدم من استخراج المخرجات التي تظهر علي الشاشة مباشرة 0

يُتنبأ بالسعة الحقلية لمختلف الآلات الزراعية (هكتار ساعة)، يحدد قدرة APAMM الجر المطلوبة لكل آلة (كيلو واط) كما يُتنبأ البرنامج بعدد الجرارات والآلات المطلوبة لكل عملية زراعية، بحسب التكلفة الكلية للعمليات (هكتار ساعة) وأيضا بحسب التكلفة الكلية والثابتة لمختلف الدورات الزراعية. يُمنح المستخدم خيار شراء أو إيجار الآلة الزراعية.

تم التحقق من صحة البرنامج بالتحليل الإحصائي بالمقارنة مع مشروع الرهد موسم (2006-2007)، وأشارت المقارنة أنه لا توجد فروق معنوية.

يمكن تطبيقه على أرض الواقع بكل نجاح وثقة APAMM أشارت النتائج أن

ABSTRACT:

The program APAMM, is a Windows based program that can be run on a Windows xp or higher system on computers. It is a user-friendly interactive program written in a Visual Basic (VB) programming environment for machinery management. It allows the user to interact with it by entering the required inputs and it will carry out the interactive calculations. The program enables the user to print out the output which is displayed on the screen . The APAMM can predict the effective field capacity for different implements(ha/hr), determines the drawbar power needed for each implement (kw),calculates the power take-off power for each implement (kw).Predicts the number of tractors and implements required for each agricultural operation. Calculates the total operation cost per ha, and per hour and finally estimates total costs of owning and operating machinery for various crop rotations, giving the user an option to hire or purchase the machine. APAMM was successfully validated statistically (chi-square)in comparison to Rahad scheme machinery system season 2006-2007. The comparisons indicated that there were no significant differences. In general, the results indicated that the APAMM could be applied to any real-life case successfully and with confidence.

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LIST OF ABBREVIATIONS

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Abbreviations and Notations

Full Name

ASAE

American Society of Agricultural Engineering.

TFC	Theoretical field capacity.
EFC	Effective field capacity.
FE	Field Efficiency.
A	Area to be processed.
D	Implement draft.
F	Dimensionless texture adjustment factor.
d	Tillage depth.
P_{db}	Drawbar or Propulsion Power
S	Forward or travel speed.
PTO or TOP	Take-off shaft power.
Prot	Rotary power.
pp	Purchase Price.
l	Life on farm.
S v	Salvage value.
tis	Taxes ,insurance and shelter costs.
el	Economic life.
f	Fuel cost .
fp	Fuel price.

0	Oil costs.
Mtc	Machinery total cost.
op	Operation cost
R &m	Repair & Maintenance.
I	Interest rate.
D	Depreciation
SDG	Sudanese giniah