

## **DEDICATION**

**THIS WORK IS DEDICATED TO MY FATHER, MOTHER AND TO ALL THE  
PEOPLE WHO CONTRIBUTED TOWARD ITS SUCCESSFUL COMPLETION**

## **ACKNOWLEDGEMENT**

FIRSTLY I WOULD TO THANK MY TEACHER DR.AL ABD ELKARIM ELOBID FADL WHO SUPERVISED THIS RESEARCH PROJECT AND OFFERED ALL HIS EXPERIENCE AND EFFORTS TO COMPLETE THIS STUDY, ALSO MY THANKS GO TO MY ALL FRIEND AND TO MY CLASSMATE

## ABSTRACT

This study was conducted in wadi soba which is located in sharg El nail locality (Khartoum State) South East of Khartoum North with an area of 200 feddan. The study area is part of the upper third terrace with nearly flat surface. The climate is semi-desert dominated by hot weather, few summer rain and cool winters. Semi-desert shrubs and grasses are noticed throughout the area.

This study aimed to identify soil suitability of Wadi Soba. A semi detailed Soil survey procedure was followed in the study area with intensity of one observation per 20 feddan.<sup>13</sup> Soil observations (10 augers + 3 profiles) were done in the study area. The surface feature and morphological description of the profile were done according to FAO methodology, 44 soil samples were collected for physical properties (mechanical analysis) and chemical properties (Ec, pH and SAR). Based on surface feature, and analytical result three soil maps were identified; Flat clay plain with sand sheet (A), Alluvium deposit with removable sand Sheet (B) and Flat plain with sand sheet (C). The results indicated the soil were developed on reworked very old alluvium and local residuum materials. According to USA soil taxonomy the soils were classified as Typic Haplocambids, The all soil are deep, non saline, non sodic. The texture is sandy clay loam to clay loam and medium structural the area is generally a flat plain. The soil developed from Aeolian reworked. According to land suitability classification the study area is classified as S2mf, S3efm with erosion, moisture and fertility limitations.

This study was recommended to add organic matter to enhance soil fertility and control wind hazard by Shelter belts of parallel lines of trees and bushes planted at short. Distances across the wind direction inside the study area are essential to halt wind hazard.

## ملخص البحث

أجريت هذه الدراسة في وادي سوبا محلية شرق النيل (ولاية الخرطوم) جنوب شرق الخرطوم بحري بمساحة تقدر بحوالى 200 فدان. تقع منطقة الدراسة فى المسطبة الثالثة لترسيبات النيل وهى شبه مسطحه ويتميز مناخ المنطقة بالمناخ شبه الصحراء الذى تهيمن عليه درجات الحرارة المرتفعه و أمطار صيفية ذات معدل قليل . وتوجد بالمنطقة شجيرات وحشائش المناطق شبه الصحراويه

تهدف هذه الدراسة إلى تحديد مدى صلاحية التربة بوادي سوبا للاستخدام الزراعى . وتم اجراء حصر التربة باستخدام طريقة الحصر الشبة تفصيلي وقد تم عمل 13 ملاحظة (10بريمه + 3 قطاع). حيث تم وصف هذه الملاحظات فى الحقل تبعاً للطريقة المتبعه فى منظمة الفاو ، تم تحليل الخواص الفيزيائية والخواص الكيمياءيه للعينات الماخوذه (44). وتم التعرف على ثلاثة وحدات تربيه الوحده الاولى سهل طينى مسطح به طبقة رملية خفيفة (A) الوحده الثانيه ترسيبات مائيه ذات قوام طينى طمى (B) الوحده الثالثه اراضى مسطحه متأثرة بزحف الرمال (C) وتبعاً لنظام التصنيف الامريكى حيث تم تصنيف التربيه وهى تقع تحت رتبة الاراضى الجافه وتتميز هذا الاراضى بقوام طينى رملى طمى الى طينى طمى وذات بناء متوسط وكما اوضحت ا لدراسة ان وحدات التربيه التى تم التعرف عليها ذات درجات صلاحية مختلفة بها محددات (التعرية، الرطوبة، الخصوبة) تعيق انتاج بعض المحاصيل (S2mf ,S3 efm)

وأوصيت هذه الدراسة باضافة المادة العضوية لزيادة خصوبة التربة . وكذلك ادخال الاحزمه الشجرية بخطوط متوازيه فى مسافات قصيره لتقليل من خطر التصحر.

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