STUDYING LIMITATIONS OF LAND CAPABILITY CLASSES AND THEIR SUITABILITY FOR POTATO YIELD AND STARCH QUILITY IN SOME OASIS IN EGYPT AND LIBYA

By

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THESIS

Submitted in Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

In

African Studies (Soil Resources), Dept. of Natural Resources
Faculty of African Postgraduate Studies,
Cairo University

2020

Name of Candidate: Hanan Abd El-Ghany Ataya Ali **Degree:** M.Sc.
Title of Thesis: Studying Limitations of Land Capability classes and their Suitability for Potato yield and Starch quality in some Oasis in Egypt and Libya.
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ABSTRACT

Farafra Oasis is located in the south of the Western Desert of Egypt, about 160 km south of Bahariya Oasis, about 300 km west of the Nile Valley and about 300 km north of the Dakhla Oasis and located between longitudes 28° 15′, 29° 40′ east and latitudes 25° 00′, 26° 00′ North. Three agricultural projects were selected in El-Frafra Oasis, Ain-Dala, Abu-Munkar and sahl Qarween. From the Landsat 8 satellite image projection onto the DEM model for each individual project, the highs and lows are defined. Fifteen soil profiles are done to represent soils of El-Frafra Oasis distributed to represent sectors 1, 2, 3, 4 and 5 in Ain-Dala project, sectors 6, 7, 8, 9 and 10 in Abu-Munkar project and sectors 11, 12, 13, 14 and 15 in sahl Qarween project. These profiles were morphologically described according to FAO (2006), and three samples were collected from each sector, thus 45 samples were collected from all the studied profiles. The current and potential suitability of a group of crops has been estimated using the Land Use Suitability Evaluation Tool.

The results of this study revealed that the potato tubers taken from Abu Minqar region gave the highest clearance of starch with the highest viscosity due to its very good industrial applications or economically beneficial as the starch sample is equivalent to two hundred times the other tubers starch and three times the commercial corn starch which represents an economic saving and energy saving in the field of food industries.

As for the area of Ain Dallah, it was characterized by the presence of mild clear properties and viscosity, followed by samples of Sahl Qarawain area.

The study of selected Libyan Oasis revealed that nearly 47 % of the study area is highly suitable for barley and 34 % of the study area is suitable for wheat production. In addition, 48 % of the study area is highly suitable for maize production and 70 % is highly suitable for sorghum production.

Keywords: Land Suitability, Remote sensing, GIS, El-Farafra Oasis, Egypt, Libya.

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