INTRODUCTION

The substantial increase in the population of Egypt and the limited land area of the valley necessitate desert farming.

Desert land represents 96% of the whole land of Egypt. This requires generating new technical information for desert farming of different crops. Such information should be based on the optimation, high productivity and sustainability .

Wheat is one of the strategic crops that should be grown on large scale for food security aspect. Desert areas have its limitations in water, soil structure and the adverse environmental conditions. Hence, the scientific research and its results that will solve such problems for better desert farming are of great value.

Area grown with wheat under irrigation or rainfed outside the old valley increased from 64383 faddans in 1989/90* growing season to 383045 faddans in 1997/98**

Nubaria desert areas proved to be of calcareous soil conditions as it has its unique characteristics. So, growing wheat in such area needs a lot of investigations for generating the appropriate cultural practices for producing higher yield of excellent quality.

The present study was designated to find out the optimum irrigation water requirement as well as the appropriate N fertilizer level of three bread wheat varieties under calcareous soil conditions of Nubaria .

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*Ann. Report, Agric. Econ. Sector Min. Agric. 1992/93 (in Arabic).

**statistical Data for Wheat Production in Egypt 1998, issued by Agric. Res. Cent., Giza, on 22/6/1998 (in Arabic)

It is hoped that the present study may add some information that can be applied for increasing wheat productivity in Nubaria region.

It is worth noting that in 1997/98 season, wheat yield in Nubaria was 12.10 ardabs*/fad as against 17.77 ardabs/fad in the old lands of the Nile valley.

*one ardab=150kg