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EFFECT OF PLANTING DATE AND PLANT DENSITIES ON COWPEA PRODUCTIVITY GROWING AT NEW VALLEY.

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ABSTRACT

Two field experiments were carried out in the Desert Research Center (D.R.C.), Agricultural experimental station at El-Kharga, New Valley Governorate, during two growing seasons of 2005 and 2006, to study the effect of planting dates and plant densities on productivity of cowpea (*Vigna Sinensis* L., cv. Kareem 7). The soil texture was sandy clay loam containing 2.04 % organic matter, pH 8.3 and EC 4.4 dS/ m. Underground water was the source of irrigation its pH was 7.3 and EC 1.08 dS/ m. **Combined analysis of the two seasons data showed the follows:**

1- Planting on 15 March as well as the density of 224000 plants / fed. each gave the highest significant values in plant height, number of branches / plant, fresh and dry weight / plant, fresh and dry forage yield/fed, number of pods / plant, number of seeds / plant, seed weight / pod, 100-seed weight, biological yield, seed yield, straw yield and chemical composition such as, nitrogen, phosphorus, potassium, total carbohydrate, crude protein contents and TDN % in seeds and straw of cowpea plants.

2- The interaction between planting date and plant density had a significant effect on plant height, number of branches / plant, fresh and dry weight / plant, fresh and dry forage yield/fed, number of pods / plant, number of seeds / plant, seed weight / pod, 100-seed weight, biological yield, seed yield and straw yield. The highest values were obtained by planting on 15 March with the density of 224000 plants / fed. while the reverse were obtained by planting on 15 February with 84000 plants / fed. Planting on 15 March increased all chemical characters i.e., nitrogen, phosphorus, potassium, total carbohydrate and crude protein contents of cowpea plants under planting density of 224000 plants / fed., except TDN % of straw which gave the highest value by planting in 1st March with 224000 plant / fed.

INTRODUCTION

There are some promising newly reclaimed lands in Egypt. In this respect, one of the most suitable location is the Oasis of New Valley region (Located at the Western Desert of Egypt), which represents large land resources and a good hope for agriculture expansion. In this region, weather is hot and dry, and cultivation depends mainly on under ground water from wells, so agriculture expansion in this case needs of special managements for better use of land and water resources.

The demand for summer forage crops of good quality for livestock has increased vigorously in recent years. In this respect, cowpea is on of the promising summer annual legume forage crop. It is well adapted to a wide range of ecological conditions and can produce better forage yield under unfavourable conditions in the newly reclaimed soils. Such soils may adversely affected the availability of some mineral nutrients to the grown crops. In this respect Ali, *et al.,* (1997) and Badr, *et al.,*(1998) mentioned that to cultivate this crop in the reclaimed lands like New Valley must define planting dates that play an important role in the productivity of cowpea crop,