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INTRODUCTION

The demand for summer feedstuffs of good quality for livestock has increased vigorously in recent years. In this respect, cowpea (*Vigna sinensis*, L.) is one of the promising summer annual legume forage crop,* particularly if we know that about 382 feddan were cultivated with this crop through the season of 1992 and its average production was 11.662 ton/feddan, with whole productivity of 4455 Ton. It is well adapted to a wide range of ecological conditions and can produce better forage yield under unfavourable conditions in the newly reclaimed sandy and calcareous soils. However, the extensive production of such plants under calcareous soil requires some information about the convenient treatments that will have a corrective influence growth and productivity processes under calcareous soil conditions.

Such calcareous soils may adversely affect the availability of some mineral nutrients to the grown crops. In this respect, Mengel and Kirkby (1978) indicated that the amount of N-fixation by *Rhizobium* species which live symbiotically with legumes and the rate of phosphate uptake depends upon soil pH. Also, Hendrix (1967) found that, at pH4 bean plants absorbed phosphate 10 fold higher rate than at a pH of 8.7.

Plants depend greatly on the non-exchangeable-K. In this connection, the non-exchangeable-K amounted to more than 82% of the K-uptake in the alluvial soils while this value did not reach more than 58% in the highly calcareous soil. However, the highly calcareous soils contain

* Annual Review of the Department of Agricultural Economics, Ministry of Agriculture, A.R.E., 1993.

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