

قسم المحاصيل Agronomy Department



## البحث الثامن

## الملخص باللغة الإنجليزية:

Two field experiments were conducted at the farm of the Faculty of Agriculture, Demo, Fayoum University, Egypt, during 2014 and 2015 summer growing seasons to study the effect of three nitrogen levels *i.e.*, 15, 30 and 45 kg N fad<sup>-1</sup> (fad=4200 m<sup>2</sup>) and foliar spraying with zinc rates i. e. (Zero, Water as a control), 0.5, 0.75 and 1.00 g Zn L<sup>-1</sup> on yield and its attributes of peanuts (variety Giza 6). The experimental design was a split - plot in RCBD with three replications, where nitrogen levels and foliar spraying of zinc rates were allocated in the main and sub plots, respectively.

- 1- The adopted either N levels or Zn foliar application rates and their interactions significantly influenced all of the measured parameters in 1<sup>st</sup> and 2<sup>nd</sup> seasons. Increasing N levels up to 45 kg N fad<sup>-1</sup> significantly increased most measured characteristics namely seed, straw and pod yields, number of pods plant<sup>-1</sup>, weight of pods plant<sup>-1</sup>, number of seeds plant<sup>-1</sup>, weight of seeds plant<sup>-1</sup>, weight of 100 pod and weight of 100 seed, seed oil yield, N%, protein %, protein yield and of groundnut in1<sup>st</sup> and 2<sup>nd</sup> seasons. On the contrary, seed oil % and N- use Efficiency traits exhibited different trend, where the values significantly decreased with increasing N levels.
- 2- The assessed Zn foliar application rates, up to 1.00 g L<sup>-1</sup> concentration, resulted in gradual significant increases for the abovementioned characteristics.
- 3- Regarding the interaction effect, it is obvious that most peanut traits under study e.g. yield, yield attributes and quality as well exhibited higher values due to the interaction of 45 kg Nfed<sup>-1</sup> level and foliar Zn application at 1.00 gL<sup>-1</sup> rate. Pod yield (t fed<sup>-1</sup>) and seed oil (%) parameters, as an average of both seasons, amounted to 2.51 t fed<sup>-1</sup> and 47.89%, respectively. Number of seed plant<sup>-1</sup> exhibited similar trend with value comprised to 58.00 in 1<sup>st</sup> season. In addition, Number of pod plant<sup>-1</sup>, seed yield (t fed<sup>-1</sup>), seed oil yield (t fed<sup>-1</sup>) and seed protein % with values reached to 34.67, 1.58, 0.76 and 26.10%, respectively, in 2<sup>nd</sup> season.
- 4- Positive and highly significant correlations were obtained between oil yield ton fed<sup>-1</sup> and seed yield ton fed<sup>-1</sup>,  $r = 0.995^{**}$  and  $0.992^{**}$ . Negative and highly significant correlations were obtained between seed yield ton fed<sup>-1</sup> and seed oil % r equals 0.539<sup>\*\*</sup> and 0.691<sup>\*\*</sup>, respectively, in 1<sup>st</sup> and 2<sup>nd</sup> seasons.