



## Response of faba bean plants to weed control treatments and foliar spraying of some bio-stimulants under sandy soil condition

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**Abstract :** Weeds infestation is one of the major threats to crop yield. Field experiments were carried out to investigate the efficiency of weed control methods (Unweeded, Bentazon+ Fluazifop-butyl, Bentazon + Clethodium and two hand hoeing) and bio-stimulants (amino acid at the rate of 1000, 2000 and 3000 mg/l,  $\alpha$ -tocopherol at 100, 200 and 300 mg/l and untreated treatments) on faba bean crop and associated weeds in El-Nubaria, Egypt. Two hand hoeing achieved the highest weed depression expressed in the lowest dry matter of broadleaved, narrow-leaved and total weeds. Reduction in dry matter of total weeds was (90.0 - 89.3%) compared with unweeded treatments. Two hand hoeing was the most superior treatment in increasing plant height, shoot dry weight, leaf area index and SPAD value at 60 and 90 days from sowing as well as yield, yield attributes and chemical composition of faba bean seeds followed by that of Bentazon + Clethodium treatments. Application of two hand hoeing and Bentazon + Clethodium provided 40.1, 35.5% more grain yield than weedy check. Amino acid application up to 3000 gm L<sup>-1</sup> or  $\alpha$ -tocopherol at 300 gm L<sup>-1</sup> enhanced growth, yield and chemical composition of faba bean seeds. The interaction between weed control and amino acid levels had significant effect on total dry weight of weeds, leaf area index and seed yield. Two hand hoeing or Bentazon + Clethodium herbicide integrated with 3000 gm L<sup>-1</sup> amino acid application produced the maximum values of leaf area index and seed yield. It could be concluded that Two hand hoeing or Bentazon + Clethodium herbicide combined with amino acid application up to 3000 gm L<sup>-1</sup> could effectively improve growth and productivity of faba bean under sandy soil conditions.

**Keywords :** amino acid,  $\alpha$ -tocopherol, Bentazon, Clethodium and Fluazifop-butyl.