

**Genotypic and phenotypic path analysis in two advanced  
generations (f<sub>5</sub> and f<sub>6</sub>) of faba bean (*vicia faba* l.)**Fares, W. M.<sup>1</sup>, A. A. M. Ashrie<sup>2</sup>, Kh. M. M. Yamani<sup>2</sup>, S. K. A. Ismail<sup>3</sup><sup>1</sup>Central Lab. for Design & Stat. Analysis Res., ARC, Giza.<sup>2</sup>Food Legume Crops Res. Sec., Field Crops Res. Inst., ARC, Giza.<sup>3</sup>Dept. of Agron., Fac. of Agric., Fayoum Univ., Fayoum.**ABSTARACT**

Due to the lack of information on genetic diversity of faba bean genotypes in the advanced generations and the need to study the associations among seed yield and its related characters, two field experiments were carried out at the Agricultural Research Station of New Valley during the two winter seasons of 2010/11 and 2011/12 to evaluate the performance of 13 faba bean genotypes for yield and its related characters in F<sub>5</sub> and F<sub>6</sub> generations. Analysis of variance and covariance were computed to estimate broad sense heritability (h<sup>2</sup>) and genetic advance (% mean) using the pertinent mean square expectations. Also, the associations among seed yield characters were studied using correlation and modified model of path analysis at the genotypic and phenotypic levels. Results showed significant differences among faba bean genotypes for all studied characters. Over the two generations, the large proportions of heritability coupled with high values of genetic advance (% mean) were recorded for number of branches plant<sup>-1</sup>, number of pods plant<sup>-1</sup> and number of seeds plant<sup>-1</sup> explaining that these traits have more chance to be improved among the tested genotypes. Highly significant and positive correlation coefficients were obtained between seed weight plant<sup>-1</sup> and each of plant height, number of pods plant<sup>-1</sup> and number of seeds plant<sup>-1</sup> at the genotypic and phenotypic levels in F<sub>5</sub> and F<sub>6</sub>. Path analysis (genotypic and phenotypic) showed that the traits *i.e.* numbers of pods and seeds plant<sup>-1</sup> and the weight of 100 seeds gave the maximum influence directly and indirectly upon seed weight plant<sup>-1</sup> in the two generations indicating their magnitude as selection criteria to obtain a valuable gain of selection for seed yield in faba bean.