



Impact of cysteine or proline on growth, some biochemical attributes and yield of faba bean

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Abstract : Two field experiments were carried out during two successive seasons (2013-2014, 2014-2015) to study the effect of two amino acids (L-cysteine or proline) as priming treatment on faba bean (*Vicia faba* cv. Sakha 4) plants at the rate of 20 and 40 mg L⁻¹. The results indicated that all treatments of the applied amino acids induced significant increments regarding plant height, number of branches and leaves/plants as well as fresh and dry weight of stems and leaves. The used concentrations of L-cysteine or proline increased significantly all photosynthetic pigments (Chl a,b and carotenoids) content of leaves as well as N, P, K in the shoots as compared with untreated plants. Priming application with L-cysteine or proline showed significant increase of number of yielded pods/plant, weight of pods/ plant, weight of seeds/ plant as well as seeds yield/feddan. Treatment with 20 or 40 mg L⁻¹ proline showed the highest level followed by L-cysteine at the rate of 20 mg L⁻¹. In addition, total carbohydrate, protein, P and K contents of dry seeds were significantly increased as compared to control plants. The ratio of essential amino acids (EAA)/non-essential amino acids (NEAA) was increased in yielded seeds of treated plants. Moreover, arginine showed the highest level of amino acids.

Key Word: Faba bean, seed priming, proline, cysteine.

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