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Effect of Salicylic Acid and Benzoic Acid on Growth, Yield and Some Biochemical Aspects of Quinoa Plant Grown in Sandy Soil

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Abstract: A field experiment was carried out at the Agricultural Production and Research Station, National Research Centre (NRC), Nubaria Province, Egypt during two successive winter seasons. In order to study the effects of exogenous application of benzoic acid and salicylic acid at different concentrations (100, 200 and 400 mg/l) on vegetative growth characters, photosynthetic pigments, seed yield quantity and quality and seed biochemical constituents of quinoa plant. In general, exogenous application of benzoic acid and salicylic acid led to marked increases in growth characters (plant height, branches and leaves number/plant as well as plant dry weight) concomitantly with an increase in the levels of IAA, photosynthetic pigments (chlorophyll a, chlorophyll b, chlorophyll (a+b), carotenoids, phenol, free amino acid contents, total soluble sugar, total carbohydrates and yield components. All treatments increased seed yield and its components, also a marked increase in nutritional values of the yielded seed (carbohydrate contents, protein, oil, flavonoid and phenolic content). It is worthy to mention that promotive effect of benzoic acid was more pronounced than salicylic acid in increasing most of the tested parameters of quinoa plant. Moreover, benzoic acid at 400 mg/l was the most effective treatment.
Key words: Salicylic- Benzoic- Quinoa- Biochemical Aspects.

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