

Effect of Salicylic Acid and Nitrogen Fertilizer on Wheat Growth and Yield

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Abstract : Two field experiments in micro plots were carried out during the winter seasons of 2012/2013 and 2013/2014, Soil Salinity Laboratory, Alexandria, Egypt, to study the effect of three levels of salicylic acid (SA) as a growth regulator (0, 50, 100 ppm) and three rates of nitrogen fertilizer (75, 100, 125 kg N/feddan) on growth and yield of a spring wheat (Giza 168). The experimental design was a split plot with the main plots in randomized complete block design (RCBD) and four replicates. The results indicated that increasing nitrogen fertilizer rates resulted in insignificant effect on both plant height (cm) and grain weight/spike only. However, a significant effect was observed in all the other studied characters due to the increase in nitrogen fertilizer. On the other hand, increasing salicylic acid rates resulted in insignificant effect in all the studied characters except for chlorophyll a, chlorophyll b, number of grain/spike, and grain yield (gm/ plot). The highest effects on grain yield in wheat were obtained by the rate of 125 kg/feddan of nitrogen fertilizer and 100 ppm of salicylic acid. In conclusion, the data indicated that a high grain yield could be obtained by adding 100 kg/feddan of nitrogen fertilizer and spraying of 50 ppm of salicylic acid with no significant difference with the highest rates. Finally, the interaction had no significant effect on all the studied characters.

Keywords : growth regulator, nitrogen fertilizer, spring wheat, salicylic acid

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