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The combined effect of mineral, organic and bio-fertilizers on growth of some wheat cultivars

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Abstract

Two field experiments were conducted at the Experimental Station Farm of Faculty of Agriculture (Saba- Basha), Alexandria University, Egypt, during 2004/2005 and 2005/2006 growing seasons. The objective of this study was to investigate the effect of mineral, organic and bio-fertilizers on growth of two wheat cultivars to improve wheat growth and minimizing pollution. The results could be summarized as follows: Gemmiza 7 cultivar at the three mentioned stages of growth gave higher plant height, number of tillers/plant, dry weight/plant, leaf area/ plant, leaf area index, flag leaf area and specific leaf weight (75,96 and 117 days after sowing) in both seasons also, CGR and RGR at growth interval of 96-117 days after sowing. The addition of mineral and organic fertilizer at rate of 100% mineral fertilizer resulted in a significant increment in growth characters of wheat plants in both seasons at three growth stages and CGR at two growth intervals in both seasons. Significant variations were recorded between the tested biofertilizer treatments for growth characters at three growth stages and growth analysis at two growth intervals of wheat plants in both seasons. The effective treatments for plant height, leaf area/plant and leaf area index at 75,96 and 117 days after sowing and flag leaf area at 96 and 117 days after sowing were obtained from Gemmiza 7 cultivar with adding the full recommended dose of NPK (F5) in both seasons. The interaction between wheat cultivars and mineral, organic fertilizers was significant on NAR at two growth intervals in both seasons. The tallest plants, the largest leaf area, LAI and flag leaf area were obtained from planting Gemmiza 7 cultivar with yeast inoculation. The highest values of all growth characters, NAR and CGR were obtained by using the full recommended NPK (F5) with inoculation wheat grains with yeast. Gemmiza 7 cultivar under using F5 with yeast inoculation gave the highest values of all studied growth characters, NAR and CGR.

Author Keywords

Bio-fertilizers growth; Organic; Wheat cultivars

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