Effect of nitrogen fertilization and some miceonutrients on yield and some technological properties of wheat

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Two field experiments were carried out at the Experimental farm of the Faculty of Agricultural at Moshtohor, Kalubia Governorate, Egypt during 1989/90 and 1990/91 seasons to study the effect of nitrogen fertilization and some micronutrients on yield and yield components and some tecnological properties of wheat variety Sakh 69. The design of the experiment was split plot with four replications. Nitrogen fertilizers rates (Zero, 30, 60 and 90 Kg N/fed.), were arranged at random in the main plot, and the combination between three levels of two micronutrients (Zero, 0.3 % and 0.6 % zinc and manganese sulphate), were randomly distributed in the sub-plots. The soil texture was clay loam with pH 7.9 . The whole plots were fertilized by 24 Kg P205 in the form of super phosphate (16 % P205) The area of each plot was 10.5 m2. Results could be summarized as follows :- I. Effect of nitrogen fertilization : A. Growth characters (at 120 days from sowing) : 1.The stem length and plant height increased significantly by increasing nitrogen rate up to 60 Kg N/fed. whereas spike length significantly increased by increasing nitrogen rates up to 90 Kg N/fed. 2.The dry weight of the different parts of wheat, (stem$,leaves, spikes and whole plant) significantly increased by increasing nitrogen levels up to 90 Kg N/fed. 3.Chlorophyll content, A, B and carotenoides increased significantly by increasing N levels up to 60 Kg N/fed. B. Yield and yield components : 1.Stem and spike length increased significantly and progressively as nitrogen rate was increased. The highest significant value of spike length was obtained from the highest rate of nitrogen (90 Kg N/fed.). 2.Number of spikelets/spike and number of grains/spike significantly increased by nitrogen application up to 90 Kg N/fed. The highest number of grains/spike was obtained by using 90 Kg N/fed. This increase in number of grains/spike reached to 37.6 % as compared with the unfertilized treatment. 3.Weight of grain spike and weight of 1000 grain significantly increased by increasing nitrogen rate up to 90 Kg N/fed. The highest weight of grains/spike and 1000 grain were obtained by application of nitrogen fertilizer at 90 Kg N/fed. 4.Number of tillers and spikes/m2 significantly increased by increasing nitrogen rate up to 90 Kg N/fed. The highest number of tillers and spikes/m2 were obtained by application of 90 Kg N/fed. 5.Grain yield Kg/fed. significantly increased by nitrogen fertilization. Application of nitrogen fertilization at 30, 60 and 90 Kg N/fed. increased wheat grain yield over the control by 23 %, 44 % and 52 % respectively. 6.Straw yield Kg/fed. significantly increased by all nitrogen rates 30, 60 and 90 Kg N/fed. as compared with the control. These increase reached to 20.4 %, 42.3 and 53.0 % by application of 30, 60 and 90 Kg N/fed. as compared with unfertilizedtreatment respectively. 7.Nitrogen application at the rates of 30, 60 and 90 Kg N/fed. increased the biological yield (Kg/fed.) by 21 %, 43 % and 53 % over the control (without nitrogen) respectively. 8. Harvest index increased by increasing nitrogen fertilization up to 90 Kg N/fed.