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Performance Automatic Sprinkler Irrigation Production and Quality of Different Egyptian Wheat Cultivars

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Abstract: The field experiments of current research work were conducted at the research station of the National Research Center, El-Noubaria, El-Behaira Governorate, during the two successive seasons of 2012/2013 and 2013/2014 to study the effect of automation sprinkler irrigation management, four Egyptian wheat cultivars: Sakha 93, Sakha 94, Misr 1, and Gemmeza 9 cultivars and different water amounts 100, 75 and 50 from soil field capacity FC (%) on yield components and some technological properties. The design experiment was factorial in complete randomized blocks with three replications. The results could be summarized as follows: Grain yield, 1000 kernel weight and moisture in grain at harvest under 100, 75 and 50%FC were increased by (6.7, 5.0; 0.8 %), (6.2, 4.3; 4.9 %) and (5.9, 4.8; 4.6 %), respectively in second season relative to the first season. On the other hand, grain yield, 1000 kernel weight and moisture in grain at harvest under Sakha 93, Sakha 94, Misr 1 and Gemmeza 9 varieties increased by (7.1, 4.5; 0.3), (6.9, 5.5; 7.1), (6.3, 3.7; 6.5) and (4.2, 5.1; 2.8), respectively in the second season relative to the first season. Quality parameters (% net flour, % of grain protein, % fat, and % total sugar in flour), under water amounts (FC%) were increased by (1.8, 11.5, 19.7; 30.8 %), (1.7, 10.4, 20.7; 18.8 %) and (1.4, 10.7, 9.6; 32.7 %), respectively in the second season relative to the first season. It could be concluded that: 50 and 75 % FC treatment gave the highest values and it has significant differences between results values, so that for best grain quality production purpose using water 50 or 75 % FC treatments with a variety of Sakha 93 and 94. While for better flour quality we can recommend using also 50 or 75% FC but with variety of Sakha 94 and Misr 1.

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