

Sixth Article (Shared with others inside the specialization – Published in national Journal – Printout from master thesis).

Effect of plant density on competitive ability between some wheat cultivars and associated weeds. (2020)

The 16th international conference for crop science.

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Article status

Shared with others inside the specialization – Published in the 16th international conference for crop science – Printout from master thesis

Impact Factor: Local

Abstract

Two field experiments were carried out at the Experimental Farm of the Faculty of Agriculture (Dar El-Ramed), Fayoum University, Fayoum governorate, Egypt, during 2017/ 2018 and 2018/ 2019 seasons, to study the effect of row spacing, some wheat cultivars and their interaction on yield and its components of wheat plants and its associated weeds. The experimental design was split-plot arrangement in randomized complete block design with four replications where row spacing was considered as the main plot, wheat cultivars arranged in the sub-plot. Results indicated that row spacing treatments were significantly on annual weeds (g/m²) and yield and its components in both seasons. Narrowest row spacing under this study (10 cm) decreased dry weight of total weeds (g/m²) by 53.62 and 45.12 % in the first and the second seasons, respectively, compared to wide row spacing (20 cm). Narrowest row spacing (10 cm) give the highest values of plant height at harvest (cm), No. of spike/m², biological yield (ton/fad) and straw yield (ton/fad) in both seasons. On the other hand wider row spacing (20 cm) give highest values of number of tillers/plant, number of spike/plant, grain weight/plant(g), spike length (cm) number of spikelets/spike, number of grain/spike, grain weight/spike (g), 1000-grain weight (g) and grain yield (ton/fad) in both seasons. Wheat cultivars were significantly effect on dry weight of weeds in both seasons. Masr 1 cultivar decreased the dry weight of total weeds by 53.56 and 58.84% in the first and second seasons, respectively as compared to Sids12 cultivar. Data indicated that the cultivars had significantly effect on the all studied traits; plant height (cm), number of tillers/plant, number of spikes/plant, grain weight/plant (g), number of spikes/m², spike length (cm), number of spikelets/spike, number of grain/spike, grain weight/spike (g), 1000-grain weight (g), grain, biological and straw yield (ton/fed.) and harvest index (%) in both seasons. Wheat cultivars were significantly effect on yield and its components in both seasons. Masr 1 has the greatest grain, biological and straw yield (ton/fed.) in the first season, but Masr 2 produced the highest value of these traits in the second season.

عميد الكلية

رئيس مجلس القسم

أ.د/ نيفين على حسن السواح

أ.د/ سمير كامل على أسماعيل