Studies of some weed control methods in wheat

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Two field experiments were conducted in the Experimental farm of Sakha Research Station, Kafr El-Sheikh during 1994/95 and 1995/96 winter seasons. The study aimed to investigate the effect of cultivars, seeding rates and weed control treatments on weeds, wheat growth and yield and its components. The investigation included three wheat cultivars, namely Sakha 8, Sakha 61 and Giza 163, three seeding rates of 40, 55 and 70 kg/fed. and three weed control treatments (Arelon at 1.25 Ufed., handweeding twice and the untreated check). The experimental design was split plot design with four replicates. The cultivars were arranged at random in main plots while seeding rates x weed control treatments were asigned at random in the sub-plots. Each sub-plot was 3.5 meters width and 4.5 meters length, wheat was sown as (Afi.r method) dry method and broadcasting.Three samples were taken randomly for weeds at 60, 90 and 120 days after sowing while two samples were taken for wheat characters at 60 and 120 days from sowing and the data were recorded for weeds and wheat characters. At maturity, ten spikes were taken at random from each plot, while the yield was determined from the encountered nine m2. The data were recorded for yield, yield components and the biological yield of wheat. Results could be summarized as follows: a. A weeds: f-Effect of seasons: The seasonal effects were significant on the most of the studied characters for weed growth during the three sampling dates excluding the numbers of total weeds at 60 and 120 days after sowin g.. With the exception of No. of grasses/m’ at all sampling dates, No. oftotal annuals/or’ at 120 days after sowing, fresh weight/m’ of grassesat all sampling dates, fresh weight of total annuals at 120 days aftersowing; dry weight of grasses at all sampling dates, dry weight ofbroad leaved and total weeds at the first sample, leaf area index forbroad leaved weeds at the first sample and leaf area index for totalannuals at the second sample, the interaction between seeding rateand season had non significant effects on all the rest measurements. IV. Effect of weed control treatments : 1. Arelon application and hand weeding significantly reduced the number of grassy, broad leaved and total annual weeds at all sampling dates. 2. Fresh weights of grassy, broad leaved and total annual weeds were significantly reduced by controlling weeds using Arelon or hand weeding at the three dates of sampling. 3. Arelon and hand weeding treatments considerably decreased dry weights of grassy, broad leaved and total annual weeds compared to the unweeded check at all sampling dates. 4. Leaf area indexes for grassy, broad leaved and total weeds at 60 and90 days after sowing were significantly reduced by Arelon and hand weeding treatments. 5. The weedy check plots recorded the highest values for all weedmeasurements during the three sampling dates. 6. The interaction between weed control treatments and seasons hadsignificant effects on all studied characters for weeds with the exception of number of annual weeds at 60 days after sowing, number of broad leaved weeds at 120 days after sowing, fresh weight of total annuals at 90 and 120 days after sowing. v. Effect of cultivar x seeding rate interaction: 1. Dry weight/m2 of grassy weeds at 60 wdays after sowing and its fresh eight at 120 days after sowing were significantly affected by thisinteraction. 2. The highest values for dry and fresh weights of grassy weeds were recorded by seeding rate of 40 kg/fed. with Giza 163 cultivar while 70kg seeds/fed. with Sakha 8 cultivar gave the lowest values in dry andfresh weights of grasses. 3. Sakha 8 cultivar significantly reduced leaf area index of grassy; broad leaved and total annual weeds with the highest seeding rate (70 kg/fed.) 4. The highest values of leaf area index of weeds were recorded by Giza163 when seeded by 40 kg/fed. S. The interaction of cultivar; seeding rate and season significantly affected all weed characters.