



Faculty of Agriculture

INTEGRATED WEED MANAGEMENT IN WHEAT

BY

Mohammed Ewis Ahmed Rady

A thesis submitted in partial fulfillment

Of

The requirements for the degree of

Master of Science

In

Agricultural Sciences

(Agronomy)

Agronomy Department

Faculty of Agriculture, Fayoum

FAYOUM UNIVERSITY

2009

ABSTRACT

Two field experiments were conducted at the Experimental Farm of Faculty of Agriculture, Fayoum University at Dar El-Ramad, Fayoum Governorate in the two successive growing seasons 2006/2007 and 2007/2008. The principal aim was to investigate the effect of tillage systems, sowing methods, chemical weed control treatments and their interactions on growth, yield, yield components and grain protein contents. The experiments were laid-out in a split-split plot arrangement in Randomize Block design with four replications. The plot area was 10.5 m². The wheat variety used was Sakah 94.

Results generally showed that the major weeds species associated with wheat crop were mostly broad-leaved weeds. The lowest weights in fresh and dry broad leaved weed were obtained with tillage system (T₂) compared with ordinary tillage (T₁) in both seasons, and significantly increased plant height, number of spikes/m², spike length, number of spikelets /spike, number of grains /spike, grain weight(g) /spike, grain weight(g) /plant, total protein percentage, biological yield and grain yield (ton/fed). Drilling method decreased the fresh and dry weights of weeds compared with broadcasting method and significantly increased plant height, number of spikes/m², spike length, number of spikelets/spike, number of grains/spike, seed index (g), grain weight/spike, grain weight(g)/plant, harvest index (%), biological yield and grain yield. On the other hand broadcasting method increased only number of tillers/plant, number of spikes /plant and straw yield (ton/fed).

All chemical weed control treatments decreased fresh and dry weights of broad-leaved weeds compared with unweeded. The highest reduction in broad-leaved weeds was achieved with tribenuron-methyl (95%) and hand weeding (70%). Also these treatments had significant effects on yield and yield components as well as, the total protein percentage in grains. Tribenuron-methyl treatment exhibited the highest grain yield (2.62 and 2.72t/fed.) followed by hand weeding treatment (2.08 and 2.0 %) in first and second season, respectively.

Interaction between tillage systems (T) and chemical weed control(CW) significant on plant height at harvest, flag leaf area, harvest index. While interaction between sowing methods (SM) and chemical weed control (CW) was significant on number of tillers/plant, number of spikes/plant, number of grains /spike.

Key words: Wheat, Tillage system, Sowing methods, chemical control, Growth, Weeds, Yield and quality.