SUMMARY

The present investigation was carried out during 1995/96 and 1996/97 growing seasons at Nubaria Agriculture Research Station , Agriculture Research Center , at North Tahrir under calcareous soil and surface irrigations .

The main objectives of this investigation were to evaluated eight bread wheat cultivars (Gemmiza 1, Giza 163 , Giza 164 , Sakha 8 , Sakha 69 , Giza 167 , Sahel 1 and Sids 1) under twelve different agricultural treatments (environments) included all combinations between four planting dates (25 /10 , 10 /11 , 25 /11 , and 10 / 12) and three irrigation treatments (one irrigation , two irrigations and five irrigations) . The eight cultivars were planted in each environment in randomized complete block design with four replications .

The data were recorded on grain yield t/ha , number of spikes per aquare meter , number of kernels per spike , 1000-kernel weight , biological yield t/ha , straw yield t/ha , harvest index and plant height .The data of all experiments were subjected to proper statistical analysis of variance according to Snedecor and Cochran (1967) and the combined analysis was conducted according to Cochran and Cox (1957) . The stability analysis were performed by using the method of Eberhart and Russell's (1966) . Correlation coefficients were also claculated between all pairs the studied traits .

The results can be summarized as follows :

1-Seasons mean squares were significant for all traits except biological yield , straw yield and harvest index .

2-The highest mean values of the studied traits were detected when wheat plants were planted in D2 (10/11) . For the harvest index and plant height the highest mean value were obtained when wheat was planted in D4 (10/12) .

3- Plants received five irrigations after sowing exhibited significant increase in all the studied traits compared with those received two or one irrigations .

4- Mean squares associated with varieties and interaction between varieties and years were significant for all traits under study , the cultivar Sids 1 had the highest mean values for all the studied traits except harvest index .

5- The D2 (10/11) and five irrigations tratment expressed significantly increased of number of spikes per square meter , 1000-kernel weight , number of kernels per spike and biological yield followed by the effect of interaction between D3 (25/11) and five irrigations treatment . However the lowest values of these traits were detected from effect of interaction between D4 (late planting date 10 /12) and one irrigation treatment .

6- The effect of interaction between planting date , irrigation treatments and seasons was significant for all the studied traits except number of spikes per square meter .

7- Sids 1 gave the highest values for grain yield t/ha , number of spikes per square meter , number of kernels per spike and 1000-kernel weight at the second planting date . While , the highest values for biological yield and straw yield were recorded by Sids 1 at the first planting date .

8- Mean squares associated with interaction between cultivars and the number of irrigation treatments were significant for all the studied traits . Grain and biological yields were noticeably increased by increasing irrigation numbers . The highest value of grain yield was achieved by Sids 1 followed by Sakha 8 and then by Giza -164 at five irrigations after sowing .

9- Mean square associated with interaction between planting date , irrigation treatments and wheat cultivars were significant for all the studied traits except number of spikes per square meter in the combined analysis . The Sids 1 expressed the highest values of grain yield t/ha at the different planting dates by one or five irrigations after sowing compared with other cultivars . Also the straw and biological yields , the highest values were detected by Sids 1 at the first planting date with five irrigations after sowing .

10- For stability parameters , the cultivars Giza 163 , Gemmiza 1 , Giza 164 , Sakha 69 and Sids 1 were more stable than the others under the envirobnents study for grain yield t/ha . For biological yield , the stable performing cultivars were Giza 163 , Giza 164 and Sakha 8 . Also for straw yield t/ha the cultivar Sakha 69 exhibited more stable for this trait .

11- Based on path coefficient analysis , the most important sources of variation in plant yield were : the direct effect of 1000-kernel weight , indirect effect of number of kernel /spike through 1000-kernel weight and indirect effect of number of spike /m through 1000-kernel weight .