

## ABSTRACT

This study was conducted at five Agriculture Experimental Stations (El-Ismailia, El-Nubaria, Sakha, El-Gemmiza and Malloway) in two seasons (2000/2001 and 2001/2002).

Hull-less barley genotypes (*Hordeum vulgare L.*) examined in this study included nine genotypes of six rowed type from some exotic materials. They were grown in six rows plot 3.5 m long, 20cm apart with three replications in five locations i.e. ten environments. The experiments were grown using a randomized complete block design

For the vegetative characters the results revealed that at Malloway location resulted in earliest heading ( genotype No. 5 ) and the earliest maturity ( genotype No. 5 ) and the highest value for number of tillers/ m<sup>2</sup> ( genotype No.5 ).Meanwhile, Sakha location resulted in the highest plant height, (genotype No. 7) .

For the yield and its components characters the results revealed that, Malloway location resulted the highest value of straw yield (genotypes ( No. 6 and No. 9 ) and highest value of number of spikes/ m<sup>2</sup>(genotype No. 5). Sakha location gave the highest value of number of kernels/ spike (genotype No. 2) and the highest value of spike kernel weight ( genotype No. 9 ). Malloway location gave the highest value of 1000 kernel weight (genotype No.9) and the highest grain yield (genotypes No.3 and 5 ) and the highest value of harvest index ( genotype No.5).

High estimate of heritability in broad sense was calculated for 1000 kernel weight, number of kernels/ spike, spike kernels weight and grain yield.

Estimate of stability for yield and yield components showed that genotypes No. 1, 6 and 7 had stability for all characters, while genotypes No. 2 and 4 were stable for all characters except number of kernels / spike. In addition, genotype No. 3 was stable for all characters except 1000 kernels weight. On the other hand, genotype No. 5 was stable only for 1000 kernels weight and number of kernels/ spike, while genotype No. 8 was stable for number of spikes/ m<sup>2</sup> and spike kernels weight, genotype No. 9 had stability for grain yield and number of spikes / m<sup>2</sup> .

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Estimate of correlation coefficient among different traits showed that days to heading was positively and significantly correlated for all characters except plant height, spike length, straw yield, number of kernels/spike, spike kernel weight, and 1000 kernel weight. Days to maturity was positively and significantly associated with each of number of tillers/m<sup>2</sup> and harvest index, while days to maturity date was negatively correlated with number of spikes/m<sup>2</sup>. Plant height was positively and significantly associated with each of straw yield, spike kernel weight, and 1000 kernels weight. Meanwhile plant height had a negative correlation with grain yield. Otherwise, spike length was also positively correlated with number of spikes/m<sup>2</sup>. Number of tillers/ m<sup>2</sup> was negative affected by number of spikes/m<sup>2</sup>. Number of spikes/m<sup>2</sup> was positively and significantly correlated with grain yield. Number of kernels/ spike was positively correlated with grain yield. Spike kernel weight was positively correlated with 1000 kernel weight, grain yield and harvest index. 1000 kernel weight positively correlated with grain yield and harvest index. Grain yield was significantly correlated with harvest index.

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