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## SUMMARY AND CONCLUSION

Five field Experiments were conducted at five experimental farms of field crops research Inst. (El-Gemmeiza, Sakha, Kafr El-Hamam, Ismailia and Noubaria). Which were representing barley production areas in Egypt. During 2004/2005 and 2005/2006 seasons. the sixteen barley genotypes of six rowed barley used. To investigate the effect of five locations and two seasons on growth and yield component. They were grown in 15 rows per plot, 3.5 m long, 20cm. a part. The sixteen genotypes were grown in a randomized complete blocks design with three replications at the five locations. Standard analysis of variance and combined analysis over all locations and seasons were calculated.

### **The results could be summarized as follows:**

#### **a) Growth characters:**

**1. Heading date**:- Differences in genotypes performance in heading date at different locations were observed. Kafr El-Hamam location had the earliest plants. While Noubaria location gave the latest location in both seasons. Genotype No. 10 was the earliest, while genotype No. 11 was the latest.

**2. Plant height (cm)**:- Data indicated that Kafr El-Hamam locations had the tallest plant height. While Ismailia location gave the shortest plant height. On other hand, genotype No. 3 gave the tallest plant height, while genotype No. 11 was the lowest plant height.

**3. Number of tillers/m<sup>2</sup>**:- The combined analysis over all seasons showed that the highest locations was El-Gemmeiza location. However the lowest one was Ismailia location. On the other side, genotype No. 4 gave the highest number of tillers and genotype No. 1 gave the lowest no of tillers/m<sup>2</sup>.

**4. Maturity date**:- Data revealed that the earliest location was Kafr El-Hamam, while Noubaria location gave the latest maturity date in all season. However genotype No. 10 gave the earliest maturing, while genotypes No. 4, 11 and 12 were the latest day to maturity.

**5. Spike length (cm)**:- Data indicated that genotype No. 3 had the highest value, while genotype No.11 gave the shortest spikes were obtained over all seasons and location. On other hand, the results revealed that El-Gemmeiza location was the tallest spikes. While, Noubaria location gave the shortest spikes over all seasons and locations.

## **b) Yield and yield component :-**

**1. Number of spikes/m<sup>2</sup>**:- Result concluded that El-Gemmeiza location had the highest value number of spikes/m<sup>2</sup>, while Ismailia location had the lowest one over all seasons and locations. On other hand, the highest number of spikes/m<sup>2</sup> was for genotype No. 4 while, genotype No. 16 gave the lowest number of spikes/m<sup>2</sup>.

**2. Number of Kernels/spike**:- The combined analysis over all locations and seasons showed that, the highest location was El-Gemmeiza number of Kernels/spike while, Ismailia

location gave the lowest value of number of Kernels/spike. However, genotype No. 4 gave the highest number of Kernels/spike, genotype No. 15 was the lowest in number of Kernels/spike.

**3. Spike kernels weight (gm)**:- El-Gemmeiza location had the heaviest Kernels weight per spike, while Ismailia location had lightest one forever all seasons. On the other hand, genotype No. 1 and 9 give the heaviest kernels/spikes, while genotype No. 10 had the lightest kernels/spike.

**4. 1000–kernel weight**:- Ismailia location had the lowest seed index, while El-Gemmeiza location gave the highest one weight insignificant the two seasons. On other hand, genotypes No. 9, 15, 6 and 1 were in gave the highest 1000-k.wt, while genotype No.10 was the lowest 1000-k.wt.

**5. Grain yield/fad (ardab)**:- The result showed that the highest grain yield obtained from El-Gemmeiza location. However Ismailia location gave the lowest value in both seasons. Genotype No. 4 gave the highest grain yield, while, genotype No. 6 had the lowest value of groin yield.

**6. Straw yield/fad. (ton)**:- El-Gemmeiza location had the highest value for straw yield, while, the lowest one was for Ismailia location. In the two seasons. On the other hand, genotype No. 4 gave the highest value of straw yield, while, genotype No. 10 had the lowest straw yield, these data may be due to the earliest in heading date.

**7. Biological yield/fad(ton):-** The combined analysis over all studying seasons showed that the highest location was El-Gemmeiza. While the lowest location was Ismailia location. On the other hand, genotype No. 4 gave the highest value of biological yield. However genotypes No. 1 and 10 were insignificant differed and gave the lowest biological yield.

**8. Harvest index:-** The combined analysis over all studying seasons indicated that the highest location was Sakha location. Meanwhile, the lowest location was Ismailia location. On the other side, genotype No. 12 gave the highest value of harvest index. While, genotype No. 2 gave the lowest for harvest index.

### **III- Correlation coefficient among different characters.**

The result indicated that:

- **Biological yield** was positively correlated with each of characters straw yield, plant height, number kernels/spike, seed index, number of tillors/m<sup>2</sup>, number of spikes/m<sup>2</sup> and groin yield.
- **Grain yield** was positively correlated with plant height, number of kernels/spike, seed index, number of tirlers/m<sup>2</sup>, number of spikes/m<sup>2</sup> and kernels/ weight/spike.
- **Number of spikes/ m<sup>2</sup>** positively associated with each straw yield, plant height, number of/kernels/spike, kernels weight/spike, seed index and number of tirlars/m<sup>2</sup>.

- **Maturity date** was positive correlated with each studied traits and insignificant. Maturely date was positive and high significant with heading date. While, it significant and negatively with each straw yield and seed index.
- **Number of tillers/ m<sup>2</sup>** was positive correlated with straw yield, number of kernels/spike, kernels weight/spike and seed index.
- **Seed index** was positively correlated with straw yield, plant height, kernels weight/spike, while, negative and significant with heading date
- **Kernels weight/spike** was positive correlation between number of kernels/spike and plant height while, negatively and significant with heading date.
- **Number kernels/spike** was positive correlation with plant height and insignificant with other studied traits.
- **Spike length** was insignificant with each studied traits.
- **Plant height** was positively and significant with straw yield but plat height was negatively and insignificant with heading date.
- **Harvest index** affected positively with traits other.