

دراسات على الثبات المحصولي لبعض التراكيب الوراثية الجديدة لسورجم العلف  
في بيئات مختلفة

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**STUDIES ON YIELD STABILITY OF NEW FORAGE SORGHUM  
GENOTYPES IN DIFFERENT ENVIRONMENTS**

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**ABSTRACT:** *The present study was carried out at four Agricultural Research Stations, ARC, to represent most agronomic and climatic conditions across the country during two seasons, 2008 and 2009 .These four locations were Sakha (Kafr El-Sheikh governorate), Gemmeiza (Gharbiya governorate), Sids (Bene Suef governorate) and El-Serw (Dommita governorate).*

*The main objective of the present investigation was to study the variation, performance and stability parameters of yield of forage sorghum genotypes, Sorghum bicolor (L.) Monch tested under eight environments (the combination of 2 years X 4 locations).*

*For Eberhart and Russell's method (1966), genotypes did not respond similarly to the varied environments. As for fresh forage yield, two genotypes might be considered as a phenotypically stable. Mean while, the genotypes; piper black, Is3191, Giza1, Sids1, Sids2 and Serw1, showed high relative yield ,regression coefficient more than unity and significant deviation from linearly, hence, might be considered as an environmentally responsive genotypes.*

*The genotypic statistic ( $\alpha$  and  $\lambda$ ) for fresh, dry forage yield, plant height and number of stems for Tai's method, 1971. The genotypes differed greatly in the amount of deviation from the linear response ( $\lambda$ ) and to a less extent in the response ( $\alpha$ ) for environments. Genotypes Serw3 and Mn4418 were average stable genotypes for high yielding environment.  $\lambda$  value were unity (0.089 and 1.192), respectively. Mean while, genotypes Serw3, Mn4418 and Is3192 has differences in main (additive) effects and has low interactions with environments (stable). The genotypes Is3292, Serw 3 and Mn4418 were average stable genotypes. The Serw3 genotypes was located in the favourable environment with average dry forage yield of 5.43 whereas Is3192 and Mn4418 were almost at the unfavoured environment with average yield of 4.81 and 5.10 kg/plot .Also, the genotype Giza 2 had located in average stability area for plant height (cm). Giza 2 was considered stable genotypes. Mean while all genotypes were considered unstable genotypes because they were located out of the average stability area. Mean while, the genotypes Is3192, Giza2 and Rex had located in average stability area for number of stems. The main objective of the present investigation was to study the variation, performance and stability parameters of yield of forage sorghum genotypes, Sorghum bicolor (L.) Monch tested under eight environments (the combination of 2 years X 4 locations).*

**Key words:** *Stability, Different environment, Cuts, Fresh, Dry, Forage, plant height*