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**Hybrid vigor and correlation for some yield and yield component traits in pumpkin (*Cucurbita moschata* Poir.) at Northern Saudi Arabia conditions****Mohamed A Abdein**

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The main objectives of this investigation were to determine the amounts of heterosis versus the mid-parents and the better parent and genotypic and phenotypic correlation. Four pumpkin varieties belong to the species (*Cucurbita moschata* Poir.), were crossed to obtain 12  $F_1$  hybrids according to a complete diallel crosses mating design system. These parental varieties were: Butternut Pumpkin ( $P_1$ ), Queensland blue pumpkin ( $P_2$ ), Bugle pumpkin ( $P_3$ ) and Long Island cheese pumpkin ( $P_4$ ). The seeds of these parental varieties were obtained from different countries:  $P_1$  from Egypt;  $P_2$  from USA;  $P_3$  from India and  $P_4$  from Pakistan. Data were recorded for nine traits: Fruit Length (FL cm), Fruit Diameter (FD cm), Fruit Shape Index (FSH), Total Soluble Solid% (TSS%), Flesh Thickness (FT cm), Weight of Fruit (WFg), Seeds Weight (SW gm), Number of Fruits Per Plant (No.F/P) and Total Yield per Plant (TY/P kg). The results also indicated that the amounts of heterosis versus mid-parents showed highly significant values for all studied traits. The estimates of heterosis versus the better parent showed highly significance for most studied traits. None of the hybrids exhibited maximum heterosis for all the traits, but significant and desirable level of heterosis over mid-parents and better parent was obtained in several hybrids for the different traits. The parents bugle pumpkin and long island cheese pumpkin produce the highest  $F_1$  hybrid and the two hybrids (Bugle pumpkin×Long Island cheese pumpkin) and (Long Island cheese pumpkin×Bugle pumpkin) appeared the highest values in most studied traits. The experimental design was the Randomized Complete Blocks Design (RCBD) with three replications at two locations in Northern Saudi Arabia conditions. The all genetic populations are evaluated in a field trial at two locations in privet farms: Rafha (Northern Boarder government) and Sakaka in (Al-Jouf government) at the summer season 2017.

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