GENETICAL STUDIES ON SOME IMPORTANT TRAITS IN RAPE SEED (CANOLA).
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الملخص
This study aimed to investigate the type of gene action and the relative amount of genetic variations as well as their interactions with locations. The study included the eight lines DH1, DH3, DH4, DH5, DH6, DH7, DH8 and DH9. These lines were homozygote. The two testers Serw6 and Serw8 were used to produce (8 lines X 2 testers) 16 F1 hybrids. All genotypes were evaluated at two different locations. The data were recorded for some traits including: Days to 50 % flowering, plant height in centimeters, number of primary branches per plant, number of siliques per plant, Weight of 1000 seeds, Seed yield per plant in grams and Oil percent. The mean squares of locations, genotypes were highly significant for all studied traits. Also, the genotypes by locations interactions mean squares were highly significant for all traits. These genotypes indicating the presence of real differences between these genotypes for these traits. These genotypes gave also different performances at the different environments. The results showed that the means of F1 hybrids were earlier where they showed less for Days to 50 % flowering, in plant height the hybrids were shorter. Thus, negative but desirable heterosis values over mid-parents and high-parent of (DH5 x Serw8) were observed for days to 50 % flowering, plant height, and weight of 1000 seed traits. Significant and desirable GCA effect were exhibited for the two parents DH4 and DH5 for Days to 50 % flowering and plant height while it was undesirable for the other studied traits. Significant and desirable SCA effect were exhibited in the F1 hybrid DH5 x Serw8 for Days to 50 % flowering and plant height while it was undesirable for the other studied traits. The results revealed that additive effects play a major role in the expression of studied traits, while dominance effects had a minor role for the other trait. Heritability estimates in broad sense (h²b %) and narrow sense (h²n) for all traits were high. Days to 50 % flowering, Plant height, number of primary branches per plant, number of siliques per plant, Weight of 1000 seeds, Seed yield per plant in grams and Oil percent were: (92.09, 94.26, 36.01, 0.0, 74.13, 75.59, 9.41) and (57.96, 64.23, 27.35, 0.0, 44.48, 75.59, 0.0) for broad and narrow sense heritability, respectively.