

**Intensity of the Heterosis Phenomenon for some Biochemical
Characteristics of some F₁ Hybrids of Pepper
(*Capsicum annuum* L., ssp. *annuum* convar., *grossum* L.)**

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ABSTRACT

Heterosis is the phenomenon representing the genetic expression favourable to hybridization (Nicolae, 1994; Craciun, 1991). It affects the quantitative features, physiological characteristics, chemical characteristics etc. In order to establish the expression intensity of the heterosis effect for the green pepper, 3 varieties and 3 advanced homozygotic lines have been used, resulting in 15 F₁ combinations after hybridization, which were studied in terms of their biochemical features -dry substance, total sugar, ascorbic acid. The expression intensity of the heterosis effect with regard to the biochemical features of the F₁ hybrids was appraised by comparing their value to the average values of the parent forms, to the value of the best parent and to the value of the witnesses, being expressed as percentage for each type of heterosis: hypothetical, real and concurrence and with different size values for the hybrids, higher for the hypothetical heterosis than for the real heterosis and the concurrence one. For the dry substance in the fruit, only the concurrence heterosis had positive values for all combinations, ranging between 2.47% (L141 x Aroma) and 37.98% (Opal x L106). The hypothetical heterosis had 2 negative values, ranging between -5.34 % (Export x Opal) and 31.05% for the Export x L141 combination, while the real heterosis was between -14.73% (Export x Opal) and 27.36% for the Aroma x L106 combination. The quantity of ascorbic acid in the fruit had negative values for the concurrence heterosis for all combinations, ranging between 50.57% for the L141xL106 combination and -6.66% for the Export x L140 combination, the hypothetical heterosis was between -32.93% (L141xL106) and 21.11% (L 140xAroma), while the real heterosis had values between -33.3% (L141xL106) and 13.47% (L140xAroma). With regard to the total sugar quantity in the fruit, for the concurrence heterosis there were only two positive values, 19.68% (Export x L140) and 6.21 % (Aroma x Opal), for the real heterosis 4 combinations, with values between -19.79% for the L141xL106 combination and 28.84% for the L140xAroma combination, while for the hypothetical heterosis the values were between -16.04% for the Export x Opal combination and 29.67% for the L140 x Aroma combination. It results that although for all the features in view we find hybrids with partial dominance or over-dominance, the heterosis for the biochemical characteristics does not present any spectacular results.

REFERENCES

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