



**THE EFFECT OF SOME AMINO ACIDS AND ANTIOXIDANTS ON
MORPHOLOGICAL, ANATOMICAL CHARACTERS, CHEMICAL
CONSTITUENTS AND YIELD OF CANOLA PLANT (*Brassica napus* L.)**

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ABSTRACT

The aim of this study was to investigate the effect of foliar application of methionine, ascorbic acid, oxalic acid and tryptophan (each at 25, 50, 75 and 100 mg/l) on certain morphological, anatomical characters, chemical constituents as well as yield and its components of canola plant (*Brassica napus* L. cv. Serw 4).

The results could be summarized as follows:

Plant height, average length of internodes, number of primary branches/ plant, number of secondary branches/ plant, fresh weight/ plant and dry weight/ plant were increased by foliar application with different concentrations of methionine, ascorbic acid, oxalic acid and tryptophan.

There was a clear increase of root as well as stem section diameter and leaf blade thickness by foliar application of all used treatments mentioned before due to the above mentioned treatments.

Chemical constituents represented in chlorophylls, carotenoids N, P, K, Mg, Fe, Zn, Mn and total carbohydrates were also increased.

Foliar application of all used treatments resulted in an increase in yield represented in number of fruits/ main inflorescence, number of seeds/ fruit, seed yield/ plant, weight of 1000 seeds and the chemical constituents of dry seeds represented in protein, P, K, Mg, Fe, Zn, Mn, total carbohydrates and oil yield/ plant. Among all used treatments, tryptophan, in general, had the greatest effect on all studied characters.