

Abstract

Foliar application of plant growth regulating compounds such as ascorbic acid and methanol improves plant tolerance to adverse environmental conditions due to physiological and morphological effects. In order to investigate the effect of foliar application of methanol and ascorbic acid on the quantitative and qualitative traits of safflower, a factorial experiment was conducted in a randomized complete block design with three replications in Rig Malek Mirjawa area. The first agent contained ascorbic acid at three levels (0, 10 and 20 mM) and the second agent contained four levels of methanol (0, 15, 30 and 45% vol.). The results of analysis of variance showed that the effect of methanol spraying, ascorbic acid and their interactions on all traits were significant. Comparison of mean interaction effects showed that the highest plant height, number of grains per head, biological yield (3633.3 kg / ha), grain yield, leaf relative water content, leaf soluble protein content, oil percentage and highest oil yield were obtained from application of 20. Molar ascorbic acid was obtained in 30% volumes of methanol in foliar solution. Also, the highest grain weight was obtained from 20 mM ascorbic acid application in 15% volumetric methanol spraying condition, and the highest harvest index (52.83%) was obtained from 20 mM ascorbic acid application under control treatment (no spraying). Methanol obtained. In addition, the highest vegetative index (79/16), chlorophyll a, chlorophyll b, total chlorophyll and carotenoids were obtained in the control (non-foliar application) ascorbic acid in 45% volumetric volatile methanol treatment, and the highest malone content. Dialdehyde and the highest proline content were observed in the control (non-spraying) treatment with ascorbic acid and the control (non-spraying) methanol. According to the results of the experiment, application of 20 mM ascorbic acid in foliar application of 30% vol. Methanol can be recommended as a suitable treatment for safflower cultivation in the area.

Keywords: Proline, Oil content, Seed yield, Cartamine, RWC.



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