

## Effect of drought on safflower natural dyes

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This research evaluated the effect of drought on total phenol, flavonoids, and proanthocyanidin composition of two *Carthamus tinctorius* varieties (Jawhara and 104) flowers. Plants were treated with different levels of water deficit: control (C), moderate water deficit (MWD) and severe water deficit (SWD). Results indicated that water stress treatment greatly limited plant growth by affecting dry biomass.

In this study, quantitative differences in different classes of polyphenols, flavonoids and proanthocyanidins of *C. tinctorius* flowers under water stress have been observed. In fact, total polyphenol content imposed a significant increase ( $p < 0.05$ ) of about 52.39 % (104) and 51.69 % (Jawhara) under 50 %. Similarly, flavonoid content declined by about 10.31 % (104) and 15.68 % (Jawhara) under 25 % with respect to 100 %.

**Keywords:** *Carthamus tinctorius* flower, Drought, Plant growth, Phenolic composition