

<b>Article title</b>	Organo mineral fertilizer can mitigate water stress for cucumber production ( <i>Cucumis sativus</i> L.).
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### Abstract

Supplying organo mineral fertilizer [a 2:10:1 (w/w/w) mixture of sulfur, compost and potassium humate] under deficit irrigation conditions could be a practical solution to compensate the negative effect of water stress on cucumber crop. For this purpose, two consecutive field experiments (summer and fall sea-sons) were conducted during 2014. Three organo mineral fertilizer (OMF) levels (0, 5 and 10 t ha<sup>-1</sup>) were supplied as a soil amendment combined with three irrigation levels (100, 80 and 60% of crop evapotranspiration). Under full irrigation, seasonal water use by cucumber was 397 mm over 76 days in summer season and 292 mm over 86 days in fall season, respectively. Cucumber fruit quality, yield, and water use efficiency (WUE) were significantly ( $p < 0.05$ ) affected by season and both irrigation quantity and organo mineral fertilizer application. Leaf area, dry matter, relative water content (RWC %), membrane stability index (MSI %), and harvest index (HI) were also significantly ( $p < 0.05$ ) affected by irrigation quantity and organo menial fertilizer and were not significantly affected by season except for dry matter. Interaction between growing season and both irrigation and organo mineral fertilizer were not significantly affected. The highest fruit yields (19.76 t ha<sup>-1</sup> and 15.94 t ha<sup>-1</sup> in fall and summer season) were recorded under full irrigation and 10 t ha<sup>-1</sup> of OMF. Organo mineral fertilizer of 10 t ha<sup>-1</sup> and 5 t ha<sup>-1</sup> significantly ( $p \leq 0.05$ ) increased fruit yield by 53.49 and 15.93% compared to control. The results suggest that the detrimental effects of drought stress can be reduced by using organo mineral fertilizer as a soil amendment for vegetable crops. Combining deficit irrigation and organo mineral fertilizer maximized crop water productivity