

Abstract

In order to study the effects of drought stress and three kind of fertilizer on quantitative and qualitative characteristics in chamomile (*Matricaria chamomilla* L.), a field experiment in a split plot under randomize complete block design with three replications was conducted in 2008 at University of Zabol. Treatments included W_1 (90% FC or non stress), W_2 (70% FC) and W_3 (50% FC) as main plot and three kind of fertilizers: F_1 (non fertilizer), F_2 (chemical fertilizer), F_3 (manure fertilizer) and F_4 (compost) as sub plot. Results showed that drought stress at W_3 treatment reduced dry flower yield nearly 18.1%. In this study, however the highest flower yield and flower yield components (Biomass, plant height, number of main stem and flower per plant) were obtained from W_1 and use of chemical fertilizer treatments, but W_3 treatment and use of manure fertilizer had the best effect on yield and yield components of flower in Chamomile. In this experiment drought stress increased Essential oil percentage but the highest of that obtained in W_2 and use of chemical fertilizer. With increase the drought levels, Ch (a), Ch (b) and potassium decreased and proline, carbohydrate and sodium increased in green tissue of leaves. Among this, use of chemical fertilizer had a best effect. Generally, drought stress in medium level lead to increase the yield of essential oil and among fertilizers, chemical fertilizer had a highest effect on yield of essential oil. So, in highest level of drought stress, use of manure fertilizer had a more efficiency than other fertilizers.

Key words: Drought stress, Fertilizer, Quantitative characters, Qualitative characters, Chamomile



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Title

**Effect of drought stress and different fertilizers
on quantitative and qualitative yield of
chamomile (*Matricaria chamomilla L.*)
(Case study: Sistan)**

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