

## عنوان مقاله:

Investigation of the performance of photosystem II in *Melissa officinalis* L. in drought stress and the effect of (salicylic acid on its chlorophyll fluorescence using measuring instrument (MINI-PAM

## محل انتشار:

بیستمین کنگره ملی و هشتمین کنگره بین‌المللی زیست‌شناسی ایران (سال: ۱۳۹۷)

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## خلاصه مقاله:

In order to investigate the effect of salicylic acid recovery on the activity of photosystem II and photosynthetic pigments under drought stress, in a lemon balm, a factorial experiment was conducted in a completely randomized design with three replications. The test factors consisted of salicylic acid with three levels (0, 0.7, 1.5 mM) and drought with three levels (0, 1/3, 2/3 field capacity). For this purpose, the seeds of the lemon balm were cultured in appropriate pots after disinfection, and after growth, they were subjected to drought stress in the four-leaf stage and the salicylic acid hormone was sprayed on the leaf. Sampling was carried out in three stages (before flowering, flowering, and flowering). Under drought conditions, maximum fluorescence ( $F_m$ ), fluorescence variable ( $F_v$ ), maximum quantum photosystem II ( $F_v / F_m$ ) efficiency and photochemical quantum efficiency increased the effectiveness of the photosystem II [ $Y(II)$ ] and reduced the quantum efficiency of photosystem II [ $Y(NPQ)$ ] and the non-phyto-chemical quantum efficiency of photosystem II [ $Y(NO)$ ] were reduced. On the other hand, salicylic acid is used as a spray 0.7 mM resulted in an increase in  $F_m$ ,  $F_v$  and  $F_v / F_m$ . At all drought levels, salicylic acid spray improved chlorophyll a and b concentrations. In total, salicylic acid spray reduced the effects of drought

## کلمات کلیدی:

*Melissa officinalis* L., Salicylic acid, Drought stress, Maximum fluorescence, Variable fluorescence

## لینک ثابت مقاله در پایگاه سیویلیکا:

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