

## عنوان مقاله:

Efficacy of salicylic acid and acetylsalicylate in enhancing faba bean resistance against *Orobanche crenata* parasite

## محل انتشار:

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## خلاصه مقاله:

*Orobanche crenata*, an obligate holoparasite, causes severe damage to faba bean grown in the Mediterranean region. A greenhouse experiment was conducted to determine and compare the potential of salicylic acid (SA), and acetylsalicylate (AcSA) used as seed soaking (0.5-1.5 mM, each) or foliar spray (2-6 mM, each) to increase faba bean tolerance to *Orobanche crenata* infection. Under the challenge of *Orobanche* infection, the application of SA or AcSA enhanced the growth of faba bean plants by improving their viability, height, and fresh and dry weight. SA and AcSA reduced the growth of parasite tubercles and retarded their development to emerged spike, the most harmful stage. AcSA was more effective than SA in increasing faba bean tolerance to *O. crenata* infection, and seed soaking showed the greatest effect. At 110 days of sowing, soaking seeds in 0.5 or 1 mM AcSA completely prevented the death of infected plants and increased the weight of plants by 22 and 67%, respectively, and pod weight/plant by 512 and 442%. Moreover, these two treatments greatly reduced *Orobanche* growth, and complete inhibition of tubercles and emerged spikes occurred by soaking seeds in 0.5 mM AcSA. *Orobanche* infection greatly increased phenolic content and antioxidant activity in the host tissues, but their levels tended to reduce by all salicylate treatments. The results suggest the great potential of soaking host seeds in AcSA, the inexpensive commercial form of SA, can enhance plant resistance against *Orobanche* parasite.

## کلمات کلیدی:

*Vicia faba*, salicylate compounds, *Orobanche*, tolerance

## لینک ثابت مقاله در پایگاه سیویلیکا:

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