

بسمه تعالی

بدینوسیله گواهی می گردد مقاله

Allelopathic Effects of Saffron Corm and Leaf on Early Growth of Rocket "
"under Laboratory and Greenhouse Condition

توسط: "Hamid-Reza Fallahi"

در **پنجمین همایش ملی گیاهان دارویی و طب سنتی** که روز پنجشنبه مورخ ۲۰ مهرماه ۱۴۰۲ در دانشگاه تربت حیدریه برگزار شد، به صورت سخنرانی ارائه گردید. توفیق روزافزون ایشان را در عرصه های علمی و پژوهشی کشور آرزومندیم.

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Allelopathic Effects of Saffron Corm and Leaf on Early Growth of Rocket under Laboratory and Greenhouse Condition

Hamid-Reza Fallahi^{1,2*}

1- Department of Plant Production and Genetics, Faculty of Agriculture, University of Birjand, Birjand, Iran.

2- Plant and Environmental Stresses Research Group (PESRG), University of Birjand, Birjand, Iran

ABSTRACT

In this study, the effect of saffron leaf and corm residue on germination and seedling growth of rocket (*Eruca sativa* L.) was studied under laboratory and greenhouse conditions. Treatments consisted of different levels of saffron leaf and corm extracts (0, 0.75, 1.5, 3 and 6%). For preparation of different concentrations of saffron aqueous extracts in laboratory tests, appropriate values of milled leaf and corm residue were separately dissolved in 100 ml of distilled water and then samples were extracted after 24 hours. The produced solutions were used for seed germination in petri dishes at 20 °C temperature. In greenhouse studies, appropriate values of milled leaf and corm residue were mixed separately with soil (0, 5, 15, 30 and 60 g.kg⁻¹ soil, for concentrations of 0, 0.5, 1.5, 3 and 6%, respectively). Then mixed samples were poured into the cotton bags and were kept in greenhouse for 35 days. During this period, the moisture of samples was adjusted about in field capacity (FC) point. Finally, the prepared soil samples were used in planting trays for running the experiments. Laboratory tests revealed that saffron leaf extract had more negative effect on rocket germination indices than corm extract. Germination percentage reduced slightly up to 3% leaf aqueous extract (LAE) and then decreased significantly in 6% LAE, so that, this index for 3 and 6% LAE was 81 and 18%, respectively. Similar results were obtained for germination rate as well as plumule and radicle lengths and dry weights. Corm aqueous extracts (CAE) had no-reducing impact on germination indices of rocket up to 0.75% CAE, but more increase in extract concentration exerted partially a deterrent effect. Germination percentage for 0, 0.75, 1.5, 3 and 6% CAE, were 92, 91, 92, 77 and 72%, respectively. Germination rate reduced from 10.2 in control to 5.9 seed per 12 hours, in 6% CAE. Both mean root and plumule dry weights for 0 and 0.75% CAE was about 0.02 g, while for other three treatments was 0.01 g. Results of greenhouse studies revealed that rocket emergence percentage was not affected by leaf residue concentration (LRC) up to 0.75%, but then decreased slightly and reached to 64% in 6% LRC. Root length was not affected by all levels of leaf residue, while plumule length reached from 4 cm in control to 3.45 cm in 6% LRC. Root and plumule dry weights of rocket increased in all levels of saffron leaf residue compared with the control treatment. By increase in corm residue concentration (CRC) from 0 to 6%, emergence percentage increased from 73 to 83%. Germination rate was not affected by corm residue, while root and plumule lengths enhanced by increase in LRC up to 3% and then slightly decreased.

Keywords: Germination percentage, Germination rate, Medicinal plant, Plumule, Radicle.

*Corresponding author: hamidreza.fallahi@birjand.ac.ir