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(Research Article)
Investigating the acoustic parameters for sounding saffron corms in greenhouse cultivation condition

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Abstract

In the present study, the acoustic parameters for inducing sound waves on saffron corms in the controlled environment and aeroponic cultivation method have been investigated. For this purpose, the acoustic box, tools and conditions for sound emission in the box were designed and prepared without affecting the adjacent box which was meant to be without sound. Due to the location of the speaker, acoustic parameters were measured for four points inside the box, including the door on the left, the door on the right, the side wall on the right, and the ceiling. Based on the analysis of the obtained sound parameters, sounding was performed on two groups of saffron corms under the sound pressure level of 77 dB. In the first group, sound waves with frequencies of 500, 1000, 2000 Hz were done in different stages of flowering induction, flowering and the whole stage of flower formation. In the secound group, sounding was performed on the corms only during the flowering stage with the frequencies of 4000, 8000, 12000 and 16000 Hz. Statistical results of flowering of saffron corms showed that with the acoustic conditions, the number of flowers was not significantly different from the control ($P>0.05$).

Keywords: Sound, Plant acoustic frequency technology, Flowering, soffran.

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