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## **Effect of Three Aquaponic Cultivation Methods on Cannabis Growth and Inflorescence Yield and Quality**

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**Abstract:** Aquaponic is a plant cultivation system that combines hydroponic and fish culture, which offer multiple environmental benefits such as reducing water and mineral fertilizer use, and effluents. Aquaponic cultivation systems may take several forms. Using 300 individuals, the variety Sour Lifter from the plant *Cannabis sativa*, we compared the effect of three aquaponic cultivation methods: deep-water-culture (DWC), living soil irrigated with aquaponic water (LVS), and a dual-rootzone (DRZ). In this last method the lower portion of the rootzone is submerged in aquaponic water and the top portion is in living soil. Our preliminary results suggest significant treatment effects ( $p < 0.001$ ) on plant growth characteristics. Plants cultivated in the DRZ treatment ( $u=28.7$ ,  $s.e.=0.9$  cm) grew significantly taller than plants cultivated in the DWC ( $u=24.3$ ,  $s.e.=1.1$  cm) and LVS ( $u=23.4$ ,  $s.e.=0.3$  cm) treatments. The average wet weight of plants from the LVS treatment ( $u=28.0$ ,  $s.e.=1.4$  g) was significantly smaller than the wet weight of plants from the DRZ ( $u=95.0$ ,  $s.e.=7.4$  g) and DWC ( $u=102.9$ ,  $s.e.=9.7$  g) treatments. These preliminary results suggest that the DRZ could be an adequate aquaponic system to grow *C. sativa*, which will be confirmed with forthcoming results on inflorescence yield and quality, and cannabinoid content.