

**PERFORMANCE OF FINE COIR DUST AS A GROWING
MEDIUM FOR HYDROPONICALLY GROWN
OKRA (*Abelmoschus esculentus*)**

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ABSTRACT

In the process of coir bales, disks and slabs production, fine coir dust is disposed as waste. Major chemical substance of this fine coir dust is lignin and it can be remained in the environment without decaying for long time creating environmental problems. Hence, fine coir dust can be used as a growing medium, as it is the waste coming from sieving coir pith which is presently used as a growing medium in commercial Horticulture. This study was designed to evaluate the performance of fine coir dust as a growing medium for hydroponically grown okra. The pot experiments were conducted in the protected house at Growrite Substrate Pvt (Ltd). The experiment design was Complete Randomized Design with five treatments and five replicates. Treatments were T1 - fine coir dust only, T2 - coir pith only, T3 - fine coir dust: coir pith 1:1, T4 - fine coir dust: coir pith 2:1 and T5 - fine coir dust: coir pith 1:2. pH, electrical conductivity (μScm^{-1}), water holding capacity (%), air filled porosity (%) and bulk density (gcm^{-3}), were measured as growing media parameters. Average plant height (cm), number of leaves after 7th week of planting, average number of flowers, average pod length (cm), total number of pods harvested and maximum rooting depth (cm) after uprooting at the 9th week were reordered as plant growth parameters. All tested growing media having properties similar to commercially available growing media. Out of the assessed plant parameters, the plants in fine coir dust (T1) have formed significantly higher number of flowers than the plants grown in growing medium with only coir pith (T2) ($P < 0.05$). The growing medium only with fine coir dust (T1) has performed better than the growing media only with coir pith (T2) when considering plant height and number of leaves at maturity without the significant difference ($P < 0.05$). The growing media only with fine coir dust (T1) and growing media only with coir pith (T2) have performed equally when considering the total number of pods formed. The growing media only with fine coir dust (T1) and growing media only with coir pith (T2) have performed similarly when considering average pod length without a significant difference ($P < 0.05$). Therefore, fine coir dust has a good potential to use as a growing medium for Okra, while solving the environmental problems that can be created by remaining it as a waste.

Keywords: Coir pith, fine coir dust, growing media parameters, okra, plant growth parameters