

**EFFECT OF PALMYRAH (*Borassus flabellifer*) COIR
DUST ON PHYSICOCHEMICAL PROPERTIES OF
POTTING MEDIA AND ON GROWTH AND YIELD OF
CHILLI (*Capsicum annum*)**

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ABSTRACT

Palmyrah coir dust is a major by-product of palmyrah fibre industry. Pot experiments were conducted to study the effect of palmyrah coir dust on growth and yield and important physicochemical properties of potting media and to select best proportion of the soil (SL), sand (SD) and palmyrah coir dust (PCD) for cultivation. Hungarian Yellow Wax (HYW) variety of *Capsicum annum* was used as a test crop under the greenhouse conditions (Temperature 30.1 °C and Relative humidity 80.9 % during day time) at Palmyrah Research Institute. The experiment designed was Complete Randomized Design (CRD) with eight treatments and three replicates. Treatments were T1 - control (soil alone), T2 - palmyrah coir dust: soil 1:1, T3 - palmyrah coir dust: sand 1:1, T4 - palmyrah coir dust: soil 1:3, T5 - palmyrah coir dust: sand 1:3, T6 - palmyrah coir dust: soil: sand 2:1:1, T7 - palmyrah coir dust: soil: sand 1:2:1 and T8 - palmyrah coir dust: soil: sand 1:1:2. Plant height (cm), average fruit weight (g) and crop yield (g) were measured. Bulk density (g/cm^3), porosity (%), water retention (% wt), pH, electrical conductivity ($\mu\text{s}/\text{cm}$), cation exchange capacity (meq/100g), available nitrogen (%), total nitrogen (%), available phosphorus (%), organic carbon (%), exchangeable calcium (%) and exchangeable magnesium (%) were measured. Physical properties of potting media were improved, when palmyrah coir dust mixed with soil and sand by reducing bulk density and increasing porosity and water retention. electrical conductivity, cation exchange capacity, total N, available N, available P, organic C and exchangeable Mg of potting media were increased when it incorporated with soil and sand without changing the pH. Plant grown in palmyrah coir dust: soil: sand – 1:2:1 mixture (T7) was showed the highest plant growth and yield (132.4 g) compared to other treatments.

Key words: Palmyrah coir dust, potting media, physicochemical properties, *Capsicum annum*