

LIQUID BIO-FERTILIZER FORMULATED FROM COCONUT AND ITS EFFECT ON GROWTH AND ROOT CHARACTERISTICS OF ROBUSTA COFFEE SEEDLINGS UNDER DROUGHT CONDITIONS

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Abstract: A nursery trial was carried out at Regional Coffee Research Station, Chundale, Wayanad district, Kerala during 2018 to study the effects of concentration levels of liquid organic nutrient mixture (20 ml, 30 ml and 40 ml dissolved in 4.5 lit of water square meter of nursery area of area) prepared from coconut, cow byproducts and naturally available organic materials against standard nursery nutrient management practices like application of inorganic fertilizer (20g of urea dissolved in 4.5 lit of water for square meter of nursery area) and supernatant solution of fermented cow dung slurry on growth and root characteristics of robusta coffee seedling. There were significant differences ($p>0.05$) in growth parameters (plant height and numbers of leaves) and root parameters (root length and average root diameter) due to the different nutrient management options. Significant differences were observed in organic treatment resulted in tallest plant height (48.25 cm) and maximum numbers of leaves (16.50) where seedlings received Coconut mixture nutrient spray @ 40 ml and which is on par with the treatment received Coconut mixture nutrient spray @ 30 ml and shortest plant height (31.85 cm) and lesser numbers of leaves (9.15) were noticed in the control without nutrient spray. Similar trend were observed in root parameters and resulted in lengthiest root (39.50 cm) and maximum root diameter (2.45 mm) in the treatment received Coconut mixture nutrient spray @ 40 ml. This preliminary result indicate that liquid organic nutrient mixture prepared from coconut, cow byproducts and naturally available organic materials is an effective bio-fertilizer and are most effective at high levels compared to conventional methods followed by the planters under the moisture stress condition.

Keywords: *Coffea robusta*, Coconut milk extract, Groundnut cake, Organic nutrient mixture

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