

B-45: Efficient use of coir dust on sudu series soil

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Sudu series is one of the widely spread soils in the coconut growing areas in the

Chilaw region. Coconut grown in this soil is often affected by droughts due to poor moisture retention. Therefore improvement of the physical condition by using by-products such as coir dust is useful and essential. A series of laboratory experiments were conducted to evaluate the capability of coir dust to (i) retain water with its age and (ii) ameliorate the moisture status and pore size distribution of sudu series. Available water capacity (between 10-1,500 kPa suction) measured in coir dust (aged from 0 to 20 years), indicated that the quantity of available water increased from 122.7% in fresh to 222.4% in 20 years old material (w/w). The increase in available water showed a linear trend ($r=0.913$; $P=0.001$) and the rate was 5.0% per annum. The coir dust incorporation into Sudu series revealed that the water holding capacity (at 10 kPa suction) progressively increased upto 21,000 kg coir dust/ha and thereafter remained constant upto the rate of 62,000 kg coir dust/ha beyond which it again gradually increased. The results suggest that the "optimum" rate of coir dust incorporation for sandy soil was 21,000 kg coir dust/ha (6.3% or 1:15 CD/sand vol/vol) and the use of old coir dust upto 20 years is more beneficial for soil amelioration compared to fresh coir dust.