



Fertilizer Properties for Design of Tractor Operated Coconut Basin Lister cum Fertilizer Applicator

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Abstract: Study was undertaken to examine the physical properties of fertilizers such as bulk density, tapped density, angle of repose and coefficient of friction which were considered to design and develop tractor operated coconut basin lister cum fertilizer applicator. For urea, muriate of potash and rock phosphate fertilizers; angle of repose values were 32.9°, 38.1° and 40.8°, respectively, bulk densities were 740.6, 1081.6 and 1326 kg m⁻³, respectively, tapped densities were 834.3, 1167 and 1419 kg m⁻³, respectively and coefficients of friction were 0.31, 0.47 and 0.55, respectively. Bulk density and tapped density influences the hopper volume and cell or flute volume of fertilizer metering roller in fertilizer applicator. Angle of repose and coefficient of friction affects the flow characteristics of fertilizer in the fertilizer applicator.

Keywords: Fertilizer properties, Angle of repose, Bulk density, Fertilizer applicator, Basin lister, Coconut palm
