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The possibility of substituting chemical fertilizer by organic manure in cattle – coconut integrated system

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Cattle integration with coconut can replace some amount of chemical fertilizer applied to coconut with dung and urine. The paper describes how much of fertilizer can be replaced by organic manure and the cost reduction in fertilizing coconut.
Cattle were employed into two treatments;
T1 - Cattle fed with natural herbage
T2 - Cattle fed with natural herbage + tree fodder (*Gliricidia*) + low cost concentrate ("Gava Thriposha" which contains rice bran - 30 %, molasses - 40 %, urea - 10 %, mineral mixture - 8 %)
Dung patches of 6 cattle (3 cattle from each treatment) were counted and weighed randomly for 9 days for the estimation. It is estimated that each coconut palm received 141 kg of fresh dung / year in T1 and 146 kg / year in T2 along with 66.6 kg of urine / year in T1 and 69.6 kg / year in T2. (13 cattle / ha; under tethering system) Cattle's rope was shortened up to 2 m at night to allow more dung and urine to be collected into the manure circle as they defecate 66 % and urinate 76 % at night. The dung and urine could replace Nitrogen fertilizer and Phosphorus fertilizer totally. Also it could reduce the Potassium fertilizer (MOP) applied to coconut by 84.56 % in T1 and by 88 % in T2 while Magnesium fertilizer (Dolomite) applied by 85.4 % in T1 and by 88.5 % in T2. This substitution can reduce the cost of fertilizing coconut by 85.77 % in T1 and by 88.92 % in T2. There's no significant difference between T1 and T2 as expected.

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