



Deutscher Tropentag, October 9-11, 2002, Witzenhausen  
“Challenges to Organic Farming and Sustainable Land Use  
in the Tropics and Subtropics”

**Effect of Vermiculture and N Fertiliser Application on Yield of  
Sweet Potato (*Ipomoea batata* L.) Clones**

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**Abstract**

Cuban agricultural production is strongly affected by the lack of energy which led to a shortage in the availability of chemical products such as mineral nitrogen fertiliser. The average sweet potato yield with 5–7 t/ha is lower compared to about 19 t/ha world-wide. Thus cuban agricultural research puts great efforts in investigating local substitution products for mineral N fertiliser, such as humus or vermiculture.

In order to investigate the effects of vermiculture (0 and 5 t/ha) and mineral N fertiliser application (0 and 70 kg urea-N/ha) on sweet potato yield and N uptake of four commercial sweet potato cultivars of the same maturity group, a field experiment was conducted at the INVIT experimental station from October 2001 to March 2002. No chemical plant protection was applied. Most important cuban sweet potato weevil, tetuán, was controlled by application of the fungus *Beauveria bassiana*. Planting density was 44.444 plants/ha, plots were irrigated with 25 mm weekly.

N application increased sweet potato yield significantly from 21.4 to 26.0 t/ha. We found no significant interaction between clones and level of N supply, but noticed a significant (Pr: 0.0642) interaction between clones and vermiculture. Vermiculture application, further, had a significant effect on leaf DM. Cultivar 90-510 was significantly higher yielding compared to clone 354, which is predominantly grown in Cuba. From our data it appears that high yield is negatively correlated with leaf weight ratio (LWR) and positively correlated with HI. LWR and HI among clones ranged from 15 to 20% and 55 to 78%, respectively.

We conclude that application of mineral N fertiliser can partly be substituted by application of vermiculture, especially in high yielding clone 90-510. Observed differences among clones in response to vermiculture application require further work on growth responses to changes in soil chemical parameters and microbial activity.

**Keywords:** Cuba, N fertiliser, sweet potato, vermiculture