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Studies on nutrient removal from alfisols by sugarcane variety CO 775 under irrigation

Estimation of nutrients uptake up to harvest and its replacement is a well recognized method for revaluation fertilizer requirements of crops. However, this has not been investigated for sugarcane in Sri Lanka.

This was studied by collecting the total above ground bio-mass as leaves/trash, tops and stalks in randomized field plots in the dominant variety CO 775 grown under irrigated Alfisols at monthly intervals beginning two months after planting up to harvest and analyzing for their nutrient contents.

The highest bio-mass formation was during 4-6 months of growth indicative of highest nutrient removal during the said period. The nutrient analysis of bio-mass shows that, the total N,P,K, Ca and Mg removed at harvest were 158, 38.91, 347, 76.45 and 48.92kg/ha of crop respectively. Nutrient removed from soil to produce one ton of millable cane were 1.18 ± 0.44 kg of N, 0.29± 0.09kg of P, 2.58± 1.00kg of K, 0.57 ± 0.22kg of Ca and 0.36± 0.13kg of Mg.

Results show that addition if fertilizer to sugarcane should be completed within four months of planting. There is substantial depletion of soils of major nutrients with the removal of stalks to the mill. Recycling of trash and tops could replenish about 50% of N,k and Mg and 36% of P and 67% of Ca. Thus a considerable saving on inorganic

fertilizers could be achieved by encouraging rapid mineralizaion of crop residues left as trash in the field.