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Title	Urine Harvesting and Utilization for Cultivation of Selected Crops: Trials from Ibadan, South West Nigeria
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Urine Harvesting and Utilization for Cultivation of Selected Crops: Trials from Ibadan, South West Nigeria

In the past we have reported on the Institution Based urine harvesting at Ede polytechnic, in South West Nigeria where a prototype urinal was built separately for male and female staff of the tertiary Institution. The idea was accepted and further experiments were planned to plant a variety of test crops. Here we report the subsequent utilization of urine for cultivation of three types of crops, viz. grain yielding (Maize, *Zea mays*), Fruit yielding (Okra, *Hibiscus esculentus*), and leafy vegetable (Tete, *Amaranthus caudatus*) in a green house and scaling up to field level. The yield potential of urine was also compared with organo-mineral fertilizer (OMF), and NPK (15:15:15) chemical fertilizer commonly used by the Nigerian farmers in the south western zone where the rainforest climate persists. The organo-mineral fertilizer was prepared from a mixture of vegetable waste from a market and intestinal waste of a slaughterhouse which were composted for sixty days and amended with additional nitrogen from urea and phosphorus from cow bone meal. Green house experiments and field trials were carried out for 12 weeks.

The rate of application of urine, OMF and the chemical fertilizer was based on nitrogen and the following rates were applied: urine 14,000 l /Ha, OMF 2,000 Kg/Ha, and NPK 300 Kg/Ha. The pots used in Greenhouse contained 2.5 Kg of soil in black polythene bags into which the appropriate manures/ fertilizers were incorporated at the beginning of the experiment. The field plots measured 2.4m X 2.4m and were randomized. Recommended planting distances were maintained for the cereal, fruit crop and the leafy vegetable. The experiments were carried out for 12 weeks and during the growth at various intervals, the growth parameters, e.g. plant height, girth of the stem, number of leaves, number of fruits or cobs where appropriate, fresh and dry weights of the plants were measured at periodic intervals. The yield of the grain, fruit or leaf at the end of the harvesting period was assessed. Acceptability of the harvested crops by volunteers was also assessed. The results indicated that urine promoted the crop yields comparable to those grown on OMF and chemical fertilizer and the product quality was better than the other treatments. Urine application helped in faster growth in all treatments, improved yield of fruit crops, luscious growths of green Amaranthus, and prolonged maize

harvesting. There was luxuriant root development in all the crops harvested with stable soil aggregates. It is concluded that urine can substitute the conventional fertilizers used by the Nigerian farmers.