Artificial Fertilizers:

An artificial fertilizer can be used one month after potting. One of the following can be used twice a month.

Hyponex, Baurs 20-20-20, Florex, Mamicrop.

Pests and diseases:

Insects like Catapillars can damage the foliage. They can be controlled by spraying Carbaryl. Rogor also can be used once a month to prevent most insect damages.

Root rot and leaf spot can be caused by excessive watering. These affected plants should be repotted using fresh compost and sprayed with a fungicide such as Thiovit, Thiotox or Captan.

Nursery Sheds.

All indoor plants should be kept under shade. They can be displaced in a shed covered with coir mesh or plastic shade cloth. Corrugated plastic sheets can be used as a shade for Begonias to protect them from heavy rains.

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MAGNITUDE AND EXTENT OF SOIL EROSION UNDER DIFFERENT LAND USE IN THE MID-COUNTRY REGION, SRI LANKA.

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Sri Lanka's total land area is about 6.66 million hectares. Of this about 1 million hectares are in between 300 m to 1000 m elevation and it is the mid-country region, Uplands, in the area with varying tophography from undulating, rolling, hilly, steepy disected to mountaineous have been covered by jungles, perennial tree crops and homestead cultivations. The vally bottoms are under low land

paddy cultivations. This region receives an average annual rainfall of 1250 to 5000 mm with a distinct bimodal pattern caused by monsoonal and intermonsoonal rains. Intermonsoonal rains consist of short duration high intensity thunder storms attaining intensities up to 100 mm per hour. The erosion caused by over land flow and high intense rain increases flood hazards and siltation problems in the low lying areas, where a number of diversion schemes have already been commissioned to boost the dry zone agriculture and the generation of hydroelectric power. Therefore, better soil and water conservation in the Mid-country region is crucial for the success of those projects and the existing agriculture in the Mid-country region.

Hence an attempt has been made to measure the components of water balance and soil movements under existing land use in small agricultural mixed-use catchments in the Mid-country. The two catchments chosen for this research project are :-

1. **Nanuoya** - about 4000 hectare in the Mid-country wet zone.
   The land use is mainly mixed gardens, mainly on assortment of perennials tree crops with some tea on the higher slopes and paddy in the valley bottoms.

2. **Hanguranketa** - about 2000 hectares in the Mid-country intermediate Zone.
   The land use is tea at higher elevations intensive arable farming in the middle slopes, mainly vegetables and tobacco and paddy in the valley bottoms.

   The soils in both catchments are mainly ultisols. Though both catchments are in the mid country the former is in the wet zone and the letter in the intermediate zone.

Measurements of rainfall, runoff, groundwater movement, changes in soil moisture were made in both catchments in order to compute the hydrological balance. At the same time soil movement from agricultural land was measured to obtain a picture of soil movement. Runoff and soil loss data were collected from both small plots (6'x30') and big plots 1 ha-1/2 ha. In the case of small plots the entire runoff and soil loss was collected into tanks while in the case of big plots a series of tanks

and devisors were used tao collect only a portion of the runoff and soil loss. In both sizes of plots three replicates were used while in the case of small plots three different slopes categories of 10%, 20% and 30% were used as treatments.

In the Nanuoya catchment runoff and soil loss studies since 1979 in the typical mixed gardens with an assortment of perennial tree crops both on replicated small plots as well as 1 ha plots clearly demonstrated that soil loss and runoff is minimal even on slopes over 30%. Measured values of soil loss over a three year period averaged only 0.05 metric tons/ha/yr.

In the Hinguranketa catchment runoff and soil loss studies during 1981/82 for a period of one year on intensive arable farming with tobacco, carrot and capsicum in the middle slopes demonstrated that soil loss and runoff were very severe and alarming both in the replicated small plots as well as 1/2 ha plots. Measured values of soil loss over a period of one year are :-

Tobacco 70 metric tons/ha/yr.

Capsicum 38 metric tons/ha/yr, and

Carrot 18 metric tons/ha/yr.

This preliminary observation indicate that the soil loss is in excess of the tolerance limit of 9 tons/ha/yr in all three cases of arable cropping.

The homesteads in the Nanuoya catchment with mixed plantings of various species of prennial tree crops to meet home needs has been practiced for generations in Sri Lanka This system of planting though ad hoc and unscientific has provided much of the population with essential needs and ensured the use of the land as a renewable resource and passed down to the next generation. The experimental date confirms that perennial mixed cropping is one of the most suited land use for the area. An estimated 75,000 ha of degraded tea land is available in the mid country for diversification and this could now be better utilized for perennial mixed cropping settlements rather than for seasonal cropping and further deterioration of the land. But a more systematic and scientific approach could be undertaken to evplve a planting system that would provide maximum production while maintaining the land base by minimizing erosion hazards.

The intensive arable cropping on the other hand in the Hangurankete catchementa is causing severe erosion which is very much more than the tolerance limit. The experimental data though limited clearly indicates trend of soil movement, from agricultural land. The runoff from this catchement drains into the Victoria Reservoir. Though movement in the streams within the catchment has not been monitored during this period it is currently under progress. However, the study indicates that, either alternate land use such as perennial mixed cropping followed in the Nanuoya catchment should be adopted or intensive soil conservation measures have to be practiced to minimize soil erosion from agricultural land and also minimise sedimentation of the Victoria reservoir.

EVALUATION OF YIELD DIFFERENCE FROM CONTINUOUS USE OF VINE CUTTINGS FOR PROPAGATION OF SWEET POTATO (Ipomoea batata)

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Sweet potato is grown in the tropics. It's tubers, are an important sources of food. They are usually eaten boiled or baked; also used for canning, dehydrating, flour manufacture and as a source of starch, glucose syrup and alcohol. The vines are widely used as a fodder for livestock.

The vegetative parts are usually used as planting materials. However, farmers have a common belief that continuous use of the vegetative propagation leads to a reduction in tuber yields. Thus once in two to three seasons they tend to plant their field with tubers as the source of planting materials, thus increase their nursery costs. Nevertheless it has not yet been established whether the physiological maturity of cuttings has a yield reduction effects. Therefore an experiment was conducted to veryfy the common belief of the farmers.

Three local cultivars : - Wariyapola, Bentota-A and Divulapitiya were used in this experiment. Cuttings were planted on ridges (18 cm high) at