Tea Bull. 8(2), 35-38, 1988

BENEFITS OF ORGANIC INPUTS IN PRACTICE

* Lt. Col. M. Jayakumar

(Superintendent, Poonagalla State Plantation, Poonagalla SPO, Bandarawela)

The ancient and modern Agriculturalists are in complete agreement as to the importance of organic matter in maintaining soil fertility. In advanced countries like the US despite the availability of cheaper inorganic fertilizers there are many factories turning out compost in view of its desirability in an agricultural system. The Tea Research Institute has all along been advocating the necessity to increase organic inputs with a view to improve fertility. However, with the large scale introduction of inorganic fertilizers in Sri Lanka, very little attention has been paid towards introducing organic matter to our tea soils and improve soil fertility. At present loppings/leaf fall from the shade trees and leaf fall from the tea forms the only organic inputs that is added to the tea soil. With the removal of shade almost two decades ago leaf litter from this source has also been minimal.

Non introduction of additional organic matter, scraping of the soil during weeding, removal of weeds out of the fields and careless handling of soils during other cultural operations have also further depleted our soils. We have now reached a crisis point as far as the soil fertility is concerned in most plantations. The organic content of most of our soils are extremely low when compared to the soils of other tea growing countries, and I am of the opinion that unless this is put right immediately the Sri Lankan tea has no chance whatsoever of reaching the yield levels of most of our competitors and we will find it hard to compete with them.

---

* The Institute does not necessarily endorse the views expressed in papers contributed by persons other than members of the staff.

The present manuring policy consists mainly of replacing the following nutrients : Nitrogen, Phosphorus and Potassium that has been removed during the harvesting of crop. In addition Zinc is also given as a foliar spray. However, there are several other essential minor nutrients so vitally necessary for plant growth at least in small quantities. In the past composting used to provide these nutrients in addition to giving various other benefits.

In most of the plantations the soils are becoming more acidic and this along with low levels of organic matter impedes soil life as well as the uptake of nutrients by plants. The effects of droughts on plant survival is aggravated when there is inadequate humus and organic matter as it seriously impairs the water holding capacity of the soil. In the past the old Planters ran Dairy Farms and Piggery making use of town refuse in some instances. They also grew Sunflower and various leguminous plants in ravines, to make compost with all the available organic matter. More attention was also paid to the growing of shade trees which were lopped regularly to keep the organic matter status of the soil at a satisfactory level. In the recent past, we have exhausted these reserves without replenishing this important source so vitally essential for plant growth.

Very little attention was paid to the addition of organic inputs in view of the slower return on the investments made on organic inputs. Some of the reasons why the practice of adding organic inputs died off are convenience of application of inorganic fertilizers, non availability of organic matter in sufficient quantities, time taken to prepare compost, etc. I give below some figures which clearly show the benefits that accrue by introducing organic matter in large quantities by way of compost and the result of this practice should be an incentive for more planters to try this out in order to improve the yields and vigour of their tea.

Cattle manure/Compost was buried in two V P fields towards the end of 1985 at the rate of about 10 to 15 tons per acre in alternate rows. Pits were dug in a staggered manner so that no tea bush had pits on both sides but were restricted to one side to minimise damage to the root system. The pits were about 10' long 1' wide and about 1 1/2' deep. In one field this work was carried out immediately after pruning so that prunings could also be buried and in the other, a few months after tipping. In both fields the yield response was very satisfactory the details of which are given below: During 1986 when most estates in the valley including Poonagalla showed a crop deficit of 100-200 kg per ha over the previous season the fields that received organic inputs showed a large increase over the previous cycle.

In the fields where burial was undertaken immediately after pruning 1 to 2 % casualties were observed while the casualty rate was much less in those fields where burial was done after tipping. For this reason it would be prudent to bury prunings following tipping. When most other V P fields were showing severe stress during the harsh Uva drought, these fields flushed well and were in a very healthy state. The cost including burying of prunings worked out to around Rs. 7,500/- to 10,000/- per acre. Taking into account the yield increase achieved so far and the long term benefits by way of better withstanding of drought, reduction of eelworm, better utilisation of inorganic fertilizers applied and finally the substantial yield increases that follow, I consider this expenditure well spent.

a) Burial done after tipping - cycle yield results up to December 1988 (Burial of approximately 15 tons per acre)

	kg
Yield of present cycle - LLG 72/74 (Yield for 3 years)	8880
Yield of previous cycle - LLG 72/74 (Yield for 3 years)	6862
Increase	2018

b) Burial done after pruning (Prunings and cattle manure/compost of approximately 10 tons per acre)

	kg
Yield of present cycle - Udahena Division 1973 (Yield for 3 years)	7187
Yield of previous cycle - Udahena Division 1973 (Yield for 3 years)	4975
Increase	2212

Note: There was some crop loss due to severe blister blight attack during January 1986 in the present cycle.

From the above results the benefits obtained from the addition of organic inputs to our soils are obvious. It may also be mentioned that burial of only prunings in a few other fields gave a 10 to 15 % yield increase and stood up better to drought.