

## B-85 Increased tea yields by foliar application of chelated micronutrients

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Decreasing or stagnating tea yields is a major national concern. The average tea yield in Sri Lanka is lower than in other tea producing countries, as a result of a combination of factors including declining soil fertility. Depletion of soil nutrients is corrected by fertilizer application, but only the major nutrients are sufficiently applied. The efficiency of nutrients as salt form is low especially when foliar application is used. Since recent knowledge on the micronutrient status in tea was scanty, an 8 months "on estate trial" was started in 1996 on an up country and a low country estate to study the effect of foliar application of chelated micronutrients. The block of  $\pm$  1 ha vegetative propagated tea, was divided into 15 plots and the treatments and 3 replicates were attributed *ad random*. The following treatments were given at the commencement and repeated after 4 months: (1) control: (normal practices but without Zn application); (2) 1 kg Fructol (5% N; 8% P<sub>2</sub>O<sub>5</sub>; 15% K<sub>2</sub>O; 4% MgO; 20 g/kg B; 8 g/kg Fe; 8 g/kg Mn 0.8 g/kg Mo; 8 g/kg Zn) + 1 l ZnChelal/ha (90 g/l Zn); (3) 1 kg Fructol/ha; (4) 1 l Zn Chelal/ha; (5) 1 l Zn Chelal + 1 kg Fructol + 1/4 l Cuivosol/ha/application (100 g/l Cu).

The effect was visible immediately after application. In the low country the yield increased by 31% and 33% with Fructol and ZnChelal respectively. In the Upcountry the yield increase with Fructol + ZnChelal was 73%, Fructol 24%; ZnChelal 33%. The effect of the foliar application declined after 2-3 months. The effect of the normal unfavourable weather conditions on the tea yield, during part of the growing season were delayed by the foliar application of micronutrients.

We demonstrated that tea yields can increase substantially by foliar application of chelated micronutrients as this alleviates the hidden deficiencies resulting from immobilization of nutrients in the soil.

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