SUMMARY

Tea is one of the most important and labour intensive industries in Sri Lanka. It provides employment for over 500,000 men and women. The process of tea manufacture at some stages liberates large quantities of dust to the working environment. To ascertain the effects of exposure to tea dust this study was undertaken with the assistance of the World Health Organisation. The study was restricted to estimation of the prevalence rate of chronic respiratory illnesses and the ventilatory function of workers engaged in tea blending. Two hundred and six men from thirteen tea exporting firms who were engaged in blending were selected. A control group of one hundred and ninety three men from a milk processing factory were selected for comparison.

The study consisted of a questionnaire on respiratory symptoms, a clinical examination, pre-shift and post-shift ventilatory function measurement on the first working day of the week, radiological examination and dust level measurement during the shift.

The mean age of the tea workers was 35.8 years, mean duration of exposure 10.8 years and 63.6% of them were smokers. Only 15.4% of the workers smoked more than ten cigarettes a day.

The workers exposed to tea dust had a statistically significant higher prevalence rate of chronic cough, chronic phlegm, chronic bronchitis, asthma and dyspnoea. The highest prevalence rates were seen in the workers who had been exposed to tea dust for over twenty years. The duration of exposure had a significant effect on the prevalence rate of chronic respiratory symptoms. The study did not reveal any effect of smoking on the prevalence of chronic respiratory symptoms.

A high proportion of workers reported the presence of acute symptoms on exposure to dust, with dryness of the nose being the most common symptom.

Statistically significant reduction in the ventilatory function during the work shift was observed. The most sensitive index was the FEF 25-75% and the PEFR, which indicated broncho-constrictor effect due to exposure to tea dust, more evident in the smaller airways. The study failed to show any relationship between the reduction in ventilatory function during shift and the dust levels to which the workers were exposed. There were many limitations in the dust concentration estimation.

Prediction formulae for ventilatory function of healthy normal males were derived from a sample of two hundred and fifty healthy normal non-smoking men. The observed pre-shift ventilatory function measurements were compared with the predicted values to ascertain any long term effect of tea dust on the ventilatory capacity. The results suggested an early obstructive effect more evident in the smaller airways and a late restrictive effect on the lung volume.

On radiological examination, there were nine tea workers with evidence of pulmonary tuberculosis even though there is no evidence of any aetiological relationship.

Exposure to tea dust causes disabling respiratory illnesses. Good occupational hygiene practices to reduce the dust level to protect the workers should be emphasised. Pre-employment and periodic medical examination is vital in identifying sensitive individuals and protecting against long-term effects of tea dust.