

**SESSION I: FOREST RESOURCE MANAGEMENT AND UTILISATION**

**APPLICATION OF STATISTICAL PROCESS CONTROL (SPC) IN  
THE RUBBER INDUSTRY**

**<sup>1</sup>M D N Gunaratne, <sup>1</sup>B N Gunaratne & <sup>2</sup>W Wijesuriya**

**<sup>1</sup>Department of Crop Science, Faculty of Agriculture, University of Ruhuna, <sup>2</sup> Rubber  
Research Institute of Sri Lanka, Dartonfield, Agalawatta**

Statistical Process Control (SPC) is a more powerful tool available to improve the manufacturing processes, to reduce scrap and rework, and ultimately make the production more competitive in terms of productivity and preventing pollution. In this study, *variable* and *range charts* are used to evaluate the process of controlling drying tower temperature in the process of latex crepe rubber production. The charts have *upper* and *lower control limits* and the process is in control if sample measurements are between the *control limits*. *R chart* was used to evaluate the variation of temperature within the drying tower. In the case of charts for individuals, moving range charts and *X charts* were used in monitoring the process of daily chemical applications such as sodium bisulphate, bleaching agents, and acids. Lack of control is identified by the points laying outside the control limits on either the *X-bar*, *X chart*, *R-bar chart* or *R charts*. Pattern of the time series interprets the variation of the process. *Runs test* was applied to check up whether the time series is in the expected random order or not. Then *Process Capability index* and the *Process Performance Indexes* were calculated to evaluate the capability and the precision of the process. Therefore in the competitive environment, statistical process control is a 'must' for achieving sustainable development in the rubber industry with high efficiency and effectiveness.