

ABSTRACT

A study to elucidate relationship between weather factors, tea productivity and Southern Oscillation Index (SOI) was carried out covering all tea growing areas in Sri Lanka to understand the impact of El Nino effect on tea industry.

Nine Agromet and Meteorological stations were selected covering all tea growing regions (High, Mid and Low) in Sri Lanka to collect rainfall and temperature data of a period of 30 years (1970-99). Monthly tea production and tea land extend were obtained from past records for the said 30 year period.

Linear correlation and time lag correlation between time series of SOI, Tea productivity, temperature and rainfall was analyzed with SPSS and MS Excel statistical packages. Results indicate that the tea productivity in high and mid tea growing areas increased with the increasing temperature. In the case of low country increasing temperatures up to about 27-28 °C was found to be favorable for the tea growth with increased productivity and further increased in temperature beyond 28 °C, would reduce the tea productivity. Tea productivity was also found to be increased with increasing rainfall up to 100 mm and excess rainfall than this limit shows no increase of tea productivity. Results conclude that there is a correlation between SOI and temperature variables and that the El Nino effect has a negative impact to decrease the tea productivity in the low country tea growing regions. However, no clear relationship was found between El Nino and tea productivity in up and mid country regions.