

**IDENTIFICATION OF POTENTIAL TOBACCO (*Nicotiana tabacum*)  
VARIETIES FOR YALA SEASON IN SRI LANKA**

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## ABSTARCT

At present K 326 is the only commercially cultivated tobacco (*Nicotiana tabacum*) variety for cigarette production in Sri Lanka. As one variety is currently being cultivated, there is a need to broaden the genetic diversity under field conditions. Therefore, this study was conducted to identify potential tobacco varieties for *Yala* season in Sri Lanka by evaluating the growth and yield performances, disease incidence of five new tobacco varieties against the currently cultivated variety K 326 under Sri Lankan conditions. Tobacco genotypes - K 326, LK 01, NC 297, GF 318, CC 67 and CC 27 were grown under field conditions in a Randomized Complete Block Design (RCBD) with 4 replicates in 3 locations (Galewela, Polonnaruwa and Mahiyanganaya - Dry and Intermediate Zones) in Sri Lanka. Survival percentage of the seedlings, total leaf area, leaf area at topping, time taken to reach the harvesting stage, fresh leaf yield and disease incidence (number of infected plants per plot) were determined to evaluate the selected varieties. The results revealed that the survival percentage of the seedlings of all tested varieties were statistically similar as that of K 326 at topping and harvesting. All the varieties reached the harvesting stage at the same time and there were no differences among the varieties in relation to growth parameters at topping, except leaf area. The variety LK 01 had the highest leaf area at this stage. The disease incidences of the plants of six varieties were also not significantly different ( $P > 0.05$ ). The highest fresh leaf yield was recorded in LK 01, which was greater than that of the control (K 326) and the lowest leaf yield was recorded in CC 27. It was clearly evident that the variety LK 01 was the best variety in terms of yield and leaf area. All the new cultivars except the variety CC 27 performed better than or in par with the currently recommended variety K 326 in terms of fresh leaf yield. This suggests that there is a potential of growing other varieties (LK 01, NC 297, GF 318, CC 67) in selected agro climatic regions and field conditions in Sri Lanka in addition to the most popular variety K 326.

*Keywords:* Genetic diversity, Tobacco, Topping, Variety, Yield