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**CRITICAL PERIOD OF WEED COMPETITION OF TWO COWPEA
(*VIGNA UNGUICULATA* L. WALP.) VARIETIES**

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Competition from weeds has become a major barrier to reach higher yields of legumes. In Cowpea (*Vigna unguiculata* L. Walp.) weed competition results in 46-81% yield loss. Conventional weed management practices have not been satisfactory over the past decades. Critical period of weed control and crop competitiveness can be effectively utilised to develop economical and environmentally sound weed management practices. The present study was conducted to determine the critical period of weed competition and crop competitiveness of two popular cowpea varieties "MI-35" and "Varuni" cultivated in Sri Lanka.

The experiment was conducted at the University Experimental Station, Dodangolla, Kundasale in *Maha* season 1996/97. Crop was exposed to natural weed infestation in different growth stages. The plots were either kept weed free or weedy up to different growth stages viz two-nodes, four-nodes, 50% flowering and maturity. After imposing treatments, weeds were allowed to grow in plots that were kept weed-free and a weed-free condition was maintained in plots that were weedy. Phonological growth and yield measurements were taken to determine the varietal performance under different weed levels.

In the variety MI-35, a rapid decrease in yield was observed when the plots were kept weedy beyond two nodes stage of the crop. A significant increase in yield was observed when plots were kept weed free from two nodes to flowering. Total yield loss in the unchecked weedy treatments were 49% and 29% in MI-35 and Varuni, respectively, when compared to all season weed-free treatments. The variety Varuni had a greater leaf area index, plant height, root and leaves biomass and root nodule number than MI-35.

The results indicate that there is a variation in critical period of weed interference and crop competitiveness between the two cowpea varieties. The Critical period of weed competition for MI-35 falls between two nodes to flowering while for the variety Varuni between four nodes to flowering. The crop competitiveness may be attributed to the differences in phenological characters of two cowpea varieties.