**204/B**

# Influence of days to flowering on morphological and physiological characters in Sri Lankan traditional rice

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Flowering is a distinct response of rice to environmental stimuli of photoperiod and temperature in addition to genetic factors. Days to flowering could be associate with morphological and physiological characters. Flowering time and resulting plant architecture are important in rice improvement. Sri Lankan traditional rice germplasm shows a wide variation in days to flowering. Therefore, this experiment was carried out to study the influence of days to flowering on morphological characters and physiological changes with the long term objective of utilizing the results in crop improvement. Three hundred and seventy four traditional rice accessions from Plant Genetic Resources Center, Gannoruwa were grown at the Rice Research and Development Institute, Bathalagoda during the *Maha* season of 2012/13. Four replicates were established in a Completely Randomized Design. Length and width of the leaf prior to flag leaf, flag leaf temperature, tiller number and plant height at maturity were measured. A correlation analysis was carried out for days to flowering with leaf length, leaf width, plant height, tiller number, leaf temperature and difference between leaf temperature and environmental temperature. The three hundred and seventy four accessions used for the analysis showed a variation in flowering time from 56 days to 141 days. The correlation analysis indicated that there are strong correlations ($P < 0.05$) between days to flowering and the characters of leaf length, leaf width and plant height. Increased vegetative growth had been reported when days to flowering are increased in Arabidopsis under non-inductive photoperiods. There are reports on late flowering japonica rice mutants producing taller plants and higher grain yields. Our results indicate that the increased days to flowering among different accessions results in enhancement of vegetative growth. However, tiller number did not show a correlation with days to flowering. Although environmental temperature has an effect on days to flowering in a given rice genotype, a correlation between leaf temperature or difference between leaf temperature and environmental temperature with days to flowering was not observed. The results of this study suggest that the days to flowering in Sri Lankan traditional rice can be a major determinant of vegetative growth and yield increment.

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