B16 A METHOD TO IDENTIFY THE DIFFERENT GROWTH STAGES OF THE RICE PLANT BY MEANS OF LEAF NUMBER INDEX

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A plant house experiment was conducted at Gannoruwa, using rice varieties Bg 34-8 (3 months) and Bg 94-1 (3 1/2 months) to find out a relationship between the Leaf Number Index (LNI) and the development stages of the panicle so that these stages could be identified without microscopic investigations. The LNI is the percentage of the total number of leaves produced at a given time on the main stem. Rice seeds were planted in 30cm diameter WAGNER'S pots (4 seeds per pot) and the recommended management practices were followed during the growth period. The number of leaves on the main culm and on primary tillers were counted at 4-5 day intervals. The main culm and primary tillers were dissected and the sections taken from the growth point were observed under the microscope to identify the stage of development as described by Matsushima.

Both varieties produced the same total number of leaves (15) irrespective of their age differences, but Bg 94-1 took 7 days more to flower than Bg 34-8 indicating a slower reproductive development in Bg 94-1. The total number of leaves produced in a primary tiller was equal to the number of leaves on the main stem above the leaf from which the particular tiller emerged. Both varieties reached the initial stage of panicle development at a leaf number of 9.8 or LNI value of 70. The neck node differentiation stage, the early differentiation stage of spikelet primodia and the reduction division of the pollen mother cells were attained at LNI values of 72, 84 and 91 respectively.

References

1. Matsushima, Seizo (1970) Crop science in rice,3d ed. Fuji publication Co.Ltd., Tokyo.