

It is evident from Table I that the leaf area calculated by the planimetry was the best as judged from  $R^2$  (99.46%). However, for estimating the leaf area of intact leaves, this method will not be suitable, besides being quite laborious and time consuming. Leaf area computed as the product of maximum breadth and length gave  $R^2$  of 61.00% only. Also for the leaf area based on dry matter,  $R^2$  is only 88.36%, whereas the  $R^2$  for the equation (2) is very high (98.17%). Since it is possible and easy to measure the maximum breadth and length of leaves in cabbage *in situ*, the fitted regression equation between actual area with the above parameters could be used with advantage. The area so obtained is very close to the actual area. This method could be adopted conveniently for cabbage and other similar crops due to the main advantage of its simplicity in operation in comparison to planimetry. At the same time, accuracy is almost as high as that of planimetry. Similar methods of estimating leaf area have been studied in tomato by Garg and Manlahar<sup>3</sup>, in groundnut by Vivekanandan *et al.*<sup>4</sup>, in Macadamia by Cormack and Bate<sup>2</sup> and in okra by Asif<sup>1</sup>, involving the linear parameters of leaves.

From this derived equation, it was observed that a very high degree of correlation exists between the actual leaf area and estimated leaf area using the equation

$$A = 0.9817 B^{1.1270} L^{0.7503}$$

Thus leaf area of cabbage could be estimated with a high degree of accuracy by simply measuring the maximum breadth and length of leaves in the field in a non-destructive growth analysis.

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### OCCURRENCE OF A NEW VIRULENT RACE 77B OF LEAF RUST ON BIJAGA RED WHEAT IN DHARWAR

THE brown rust or leaf rust *Puccinia recondita* Rob. ex. Desm. is considered to be the most disastrous disease of wheat crop. The losses due to brown rust are appreciable due to its wide spread nature.

The variety bijaga red is resistant to the races 12, 77, 77A, 162 and 162A which are common in peninsular India. However, the heavy incidence of leaf rust was observed on bijaga red during the crop season 1976-77. The leaf rust differentials were grown both in the field and under glass house conditions. The leaf rust sample of bijaga red was collected and tested in glass house during 1976-77. The difference in the pathogenicity to the race 77A and 77B was observed. Bijaga red was resistant to race 77A but susceptible to 77B. It may be concluded that, 77B is a new virulent race on bijaga red.

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### THREE NEW RECORDS OF ASCOMYCETOUS FUNGI FROM INDIA

THE present note deals with three ascomycetous fungi, isolated from soil during a general survey of fungal flora from Jabalpur and suburbs. A perusal of literature on Indian fungi showed that these forms have not been reported so far from the country. The morphological characters of these as observed in cultures are briefly given below.

1. *Pseudophaeotrichum sudanense* Aue, Muller and Stoll, 1969, *Nova Hedwigia*, 17: 83-91.  
Perithecia solitary, superficial, black, non-ostiolate, globose to ovoid, 240.7-511.0  $\mu$ ; rhizoids poorly differentiated. Asci clavate, hyaline, evanescent, 12.4-16.8  $\times$  11.6-12.4  $\mu$ . Ascospores irregularly arranged, 2-celled, rhomboid with median septum, dark grey, 9.2-12.3  $\times$  3.7-7.0  $\mu$ .

Subculture deposited at C.M.I., Kew, England under the accession number JMI 161622.

2. *Chaetomium medusarum* Meyer and Lanneau, 1967, *Bull. Trim. Mycol. Fr.* 83, 318-323.  
Perithecia solitary, superficial, dark brown, oval to broadly ellipsoidal, ostiolate, 104.0-140.0  $\times$  72.0-96.0  $\mu$ . Rhizoids subhyaline to pale brown, branched. Terminal hairs few, unbranched, smooth, dark brown,