

AGROMETEOROLOGICAL INFORMATION FOR PLANNING AND OPERATION IN AGRICULTURE

WITH PARTICULAR REFERENCE TO PLANT PROTECTION

Calcutta, India, 22-26 August 1988



GENEVA 1989

1 CHARACTERIZATION OF ENVIRONMENTS FOR ERGOT DISEASE DEVELOPMENT IN
2
3 PEARL MILLET¹

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5 ABSTRACT

6 Ergot disease, caused by *Claviceps fusiformis* Loveless, is
7 important in some pearl millet (*Pennisetum glaucum* (L.) R. Br.)
8 growing areas in certain years. Disease development is related to
9 relative humidity (> 80%), frequent rain showers, and cloudy days
10 during the preanthesis stage but quantitative information is
11 scarce. In this study, an attempt has been made to use
12 agroclimatic data to characterize pearl millet growing
13 environments for ergot development.

14 The information on ergot development, based on artificial
15 inoculation, obtained from a multilocational ergot nursery has
16 been superimposed on the pearl millet distribution map of India
17 to show areas with high, medium, and low probabilities of disease
18 occurrence.

19 A pearl millet growth simulation model was used to
20 identify the susceptible growth stage (e.g., preanthesis) for
21 pathogen infection. We have chosen the following criteria
22 thought to be conducive for ergot development: daily rainfall

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24 ¹Submitted as conference paper No. 485 by the International
25 Crops Research Institute for the Semi-Arid Tropics (ICRISAT) for
26 the Workshop on Agrometeorological Information for Planning and
27 Operation of Agriculture with Particular Reference to Plant
28 Protection, cosponsored by the World Meteorological Organiza-
29 tion, 22-26 August 1988, Calcutta, India.

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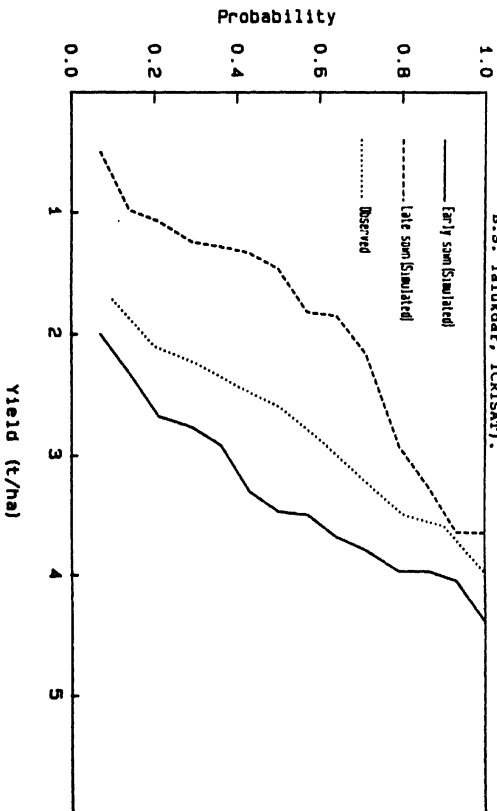


Figure 5a. Probabilities of less than a specified amount of pearl millet grain yield under rainfed condition at Patancheru. Available water-holding capacity of the soil is 80 mm. Data base is 1974 to 1987. (Data on observed grain yield were supplied by S.P. Wani and B.S. Talukdar, ICRISAT).

