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RESEARCH PAPER

Influence of abiotic environmental factors on purple blotch disease (*Alternaria porri* Eliss CIF.) of onion

MOHAMMAD ANSAR* AND M.R. DABBAS[1]

[1]Centre of Advance Faculty and Training, Department of Plant Pathology, G B Pant University of Agriculture and Technology, PANTNAGAR (UTTARAKHAND) INDIA

Abstract **:** The influence of environmental factors on the development of purple blotch of onion *Alternaria porri* Elis Ciff. was studied under both laboratory and field conditions. Conidial germination (71.0 %) and germ tube length (46.0 µm) were recorded maximum at 28^0 C. High relative humidity favuored conidial germination and germ tube length. Under field conditions, temperature and RH play an important role in the disease development. Range of temperature 25.50- 28.00 and 26.5-27.2, RH 88-76 per cent and 80-78 per cent favoured highest disease incidence during 2008 and 2009 seasons, respectively.

Key Words **:** *Alternaria porri* , Purple blotch, Onion

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INTRODUCTION

Onion is found in a large number of recipes and preparations spanning almost the totality of the world's cultures. The whole plant is edible and is used as food in some form or the other. This is one of most important vegetable cum condiment crop grown in round the year in all over Uttar Pradesh. Due to condition of cultivation purple blotch (*Alternaria porri)* has assumed problem in north India. Purple blotch is one of the important disease of onion in the state that limits yield and quality bulb of crop during the *Rabi* season. Purple blotch causes loss about 20-60 per cent in bulb yield and extent of loss depend on time of infection and stage of crop growth (Thind and Jhooty, 1982). Various environmental factors like temperature RH play important role in the development of the disease in field (Asiosa *et al.*, 1986). Quantification of critical environmental factor responsible for initiation and subsequent spread of disease was attempted for the development of need based application of fungicide through effective prediction and warning system.

MATERIALS AND METHODS

Conidia form freshly sporulating colonies were gently dusted on the clean glass slide by placing them in rectangular glass settling tower (1x1x1.5") with the help of small motorized air pump use for aerating an aquarium to get air pressure for blowing of conidia (Stevens, 1916). To determine the influence of temperature, the slides were kept in Petri plates (90 mm dia) containing moistened cotton wool were transferred to incubators maintained at different temperature and moist chamber at maximum RH.

All the treatments were replicated three times. Another set of Petri plates was sealed with paraffin film and transferred to an incubator maintained at 25±2^{0}C. Slides were microscopically examined after 24 hrs to record conidial germination and germ tube length. About 300 conidia selected randomly from different microscopic field were examined to calculate germination (%) and germ tube length.

Meteorological factor and disease development:

A field experiment was laid out a vegetable farm

*** Author for correspondence.**

[1]Department of Vegetable Science, C.S.A. University of Agriculture and Technology, Kalyanpur, KANPUR (U.P.) INDIA