

## Temperature-growth relationship of *Phaeoisariopsis personata*

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Growth of *Phaeoisariopsis personata* was measured in different temperatures of 10, 15, 20, 25, 30 and 35°C on peanut leaf oatmeal agar medium and maximum growth was observed in 25°C. At very high and low temperature conditions like 10, 15 and 35°C growth was very slow. At 20°C growth was slow as compared to 25°C and 30°C where growth fast was observed. In the liquid medium, potato dextrose broth showed significant difference in growth and dry weight accumulation at different temperatures. Highest dry weight was accumulated at 25°C (1025mg) followed by 30°C (969mg) and 20°C (635mg), whereas 15°C accumulated less dry weight (312mg) followed by 35°C (292mg) and 10°C (273mg). The mycelial growth decreased with decreasing and increasing temperatures beyond the optimum temperature range of 25-30°C. So by visual observation at 20 days after inoculation on peanut leaf oatmeal agar and dry weight of mycelial mat was measured in case of liquid media to see the effect of different temperatures on growth of the pathogen.

**Key words :** Groundnut, *Cercospora*, *Phaeoisariopsis personata*

**How to cite this paper :** Nath, B.C., Sarma, B.K., Vaish, S.S., Chand, R. and Pal, Chhattar (2013). Temperature-growth relationship of *Phaeoisariopsis personata*. *Asian J. Bio. Sci.*, 8 (1) : 32-35.

### INTRODUCTION

Groundnut is native to South America, originated between Southern Bolivia and Northern Argentina, from where it spread throughout the new world. Groundnut was introduced in India by around 16<sup>th</sup> century by the Portuguese. The importance of groundnut deserves emphasis as it is the world's second largest source of edible oil. It is extensively used as a cooking medium both as refined oil and hydrogenated oil. Groundnut oil is used in confectionary preparation such as peanut butter, peanut butter milk, margarine, ice cream, bakery goods etc. Groundnut oil is a health friendly, having least cholesterol increasing property in human body for its higher proportion of poly-unsaturated fatty acid components. Apart from high oil content of 47.50 per cent, peanut contains 28.50 per cent protein, 11.20 per cent carbohydrate, 2.90 per cent mineral ash and appreciable amount of vitamin B complex and vitamin K (Freeman *et al.*, 1954). A large number of diseases attack groundnut in India (Mayee, 1987; Mayee and Dater, 1988). The majorities are caused by fungi and several of them are yield reducer in certain regions and seasons. A few viral and two bacterial diseases (Dhal *et al.*, 2002) have also been reported. Late leaf spot (LLS) is a very serious foliar fungal disease of groundnut together with early leaf spot and rust.

Yield losses of about 10 per cent kernels have been estimated from the southern USA where fungicide application is normally practiced. Over much of the semi-arid tropics where chemical control of leaf spots is rarely practiced, losses in excess of 50 per cent are common (Jackson and Bell, 1969; Garren and Jackson, 1973). It has been estimated that early and late leaf spot alone cause the loss of about 3 million tones of kernels per year (Bunting *et al.*, 1974). Both early and late leaf spots are disastrous to the plant as it reduce the photosynthetic area by intense lesion formation and by stimulating leaflet abscission (Gerlagh and Bokdam, 1974; McDonald *et al.*, 1985). Butler (1990) reported that infection was very rapid at 23°C when the leaf wetness was provided for five nights. These results confirmed earlier findings of Shew *et al.* (1988) that infection occurred with intermittent periods of surface moisture. He, therefore, concluded that dominant variable affecting infection at a particular temperature was the total number of hours of leaf wetness. Carisse *et al.* (1993) studied the sporulation of *Cercospora carotae* on carrot leaves and reported that sporulation increased with increasing temperature up to the optimum of 28°C, then decreased as temperature increased to 32°C; however, no sporulation was observed at 16 and 32°C when relative humidity was 96 per