

## Research Article

# Predicting Relationship with Weather Parameters and Yield Losses Due to Stem and Root Rot of Sesame Caused by *Macrophomina phaseolina*

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## Abstract

Stem and root rot of sesame (*Macrophomina phaseolina*) favoured by high temperature and low relative humidity. Experiments conducted during *Kharif* 2018 and 2019, in which disease initiated during second week of August and maximum during second to third week of September. The maximum and minimum temperature, as well as the morning and evening relative humidity, were recorded as 34.2 C, 20.2 C; 79 and 48 per cent and 36.3 C, 24.9 C; 88 and 52 per cent during both 2018 and 2019, respectively. Disease incidence was maximum (11.3 and 14.3%) as the weekly percentage of disease incidence, during the 2018 and 2019 seasons, respectively. Disease was declined during last week of September and showed significantly positive correlation with maximum temperature and sunshine hrs. Minimum temperature, relative humidity and rainfall showed negative correlation during *kharif* 2017 and 2018 crop seasons. A correlation of multiple determinations ( $R^2$ ) was 89.30 and 73.50 per cent during 2018 and 2019, respectively. It means 73.50–89.30 per cent disease incidence was based on weather variables. Assessment of the yield losses in both the protected and unprotected block revealed that the protected block gave higher seed yield with lower disease incidence. Yield losses were recorded at 59.3 and 61.4 per cent during *kharif* 2018 and 2019 seasons, respectively.

**Key words:** *Macrophomina phasolina*, sesame, weather parameter, yield losses

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