

Summary

1. Pathogenicity test of *G. cingulata* was tested on 9 varieties of tea (TV-30, TV-29, TV-26, TV-25, TV-23, TV-22, TV-18, Teenali-17, and TV-9) by detached leaf and cutshoot inoculation techniques. TV-18 was most susceptible followed by TV-25, while TV-26 was most resistant followed by TV-29.
2. Ten day old culture of *G. cingulata* had maximum infective capacity and produced maximum lesion on detached leaves.
3. Optimum spore concentration for disease production was 1.6×10^5 spores/ml in all varieties.
4. Disease development was maximum under diffused light conditions and during rainy season.
5. Occurrence of brown blight disease was surveyed on 6 varieties of tea (TV-26, 25, 23, 22, 9 and Teenali-17). Symptoms of brown blight disease in the field were common on the lower leaves. TV-26 was most resistant and 25 susceptible.
6. Meteorological data of three years — 1996, 97, 98 were collected which included maximum and minimum temperature, % relative humidity, hours of sunshine and monthly rainfall.
7. Mean maximum temperature ranged from 22-30°C and minimum ranged from 9°C - 25°C.
8. Relative humidity ranged from 87-95% in the morning and from 42% to 75% in the afternoon.
9. Hours of sunshine was recorded ranged from 4.5 in January to 8.7 in May; rainfall ranged from trace to 1090 mm.
10. Positive significant correlation of disease occurrence was obtained with minimum temperature, relative humidity and rainfall, while negative correlation was obtained with hours of sunshine. Maximum temperature had no significant correlation with disease.
11. The growth and the sporulation of *G. cingulata* was observed on nine media of which maximum growth and sporulation was observed in Richard's agar medium (solid) and Richard's medium (liquid).
12. Maximum growth of *G. cingulata* occurred at pH7 and minimum at pH4.

13. Maltose and KNO_3 were the best carbohydrate and nitrogen sources for the growth of *G. cingulata*.
14. Maximum spore germination and appressoria formation was observed at 24 hours of incubation. Germtube length was also maximum at 24 hours.
15. Spore germination & appressoria formation at pH4 was found to be high and temperature of 25°C was optimum.
16. Diffused light was most conducive for spore germination. Phenol content was determined among the 9 varieties of tea. Total phenol content among the 9 varieties varied from 28mg/g tissue to 46 mg/gm tissue and orthodihydroxy phenol content varied from 8-20mg/gm tissue.
17. Maximum phenols were recorded in the rainy season and in the young leaves. Inoculation with *G. cingulata* resulted in increase in phenol content, which was maximum, in the most resistant variety (TV-26).
18. This was also observed in the leaves of all ages. Orthodihydroxy phenol also increased after inoculation in all tested varieties.
19. Diffusible phenolics were elicited to the greatest by spore of *G. cingulata* on the resistant variety.
20. Maximum chlorophyll content was present in the older leaves, but showed no significant difference among the varieties. Chlorophyll content was reduced in the leaves following infection.
21. Maximum epicuticular wax content was obtained in the older leaves and minimum in the younger leaves.
22. Epicuticular wax content was higher in the resistant varieties.
23. No major anatomical differences were observed among different varieties.