

Susceptibility assessment of seeds and seedlings of *Dalbergia sissoo* to *Colletotrichum gloeosporioides* and other *Colletotrichum* species (*C. siamense* and *C. fragariae*)

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INTRODUCTION & AIM

HOST *Dalbergia sissoo*

- Deciduous tree Tropical and Sub tropical regions
- Utilized mainly for timber and medicinal purposes
- Germination period (1-2) weeks

The pathogens, *Colletotrichum* spp.

- Optimal temperature (25–30°C)
- Humid and sub-humid tropical conditions.
- Family Fabaceae, Anacardiaceae, Myrtaceae, Malvaceae, Poaceae
- Spore dissemination - splashing rain.

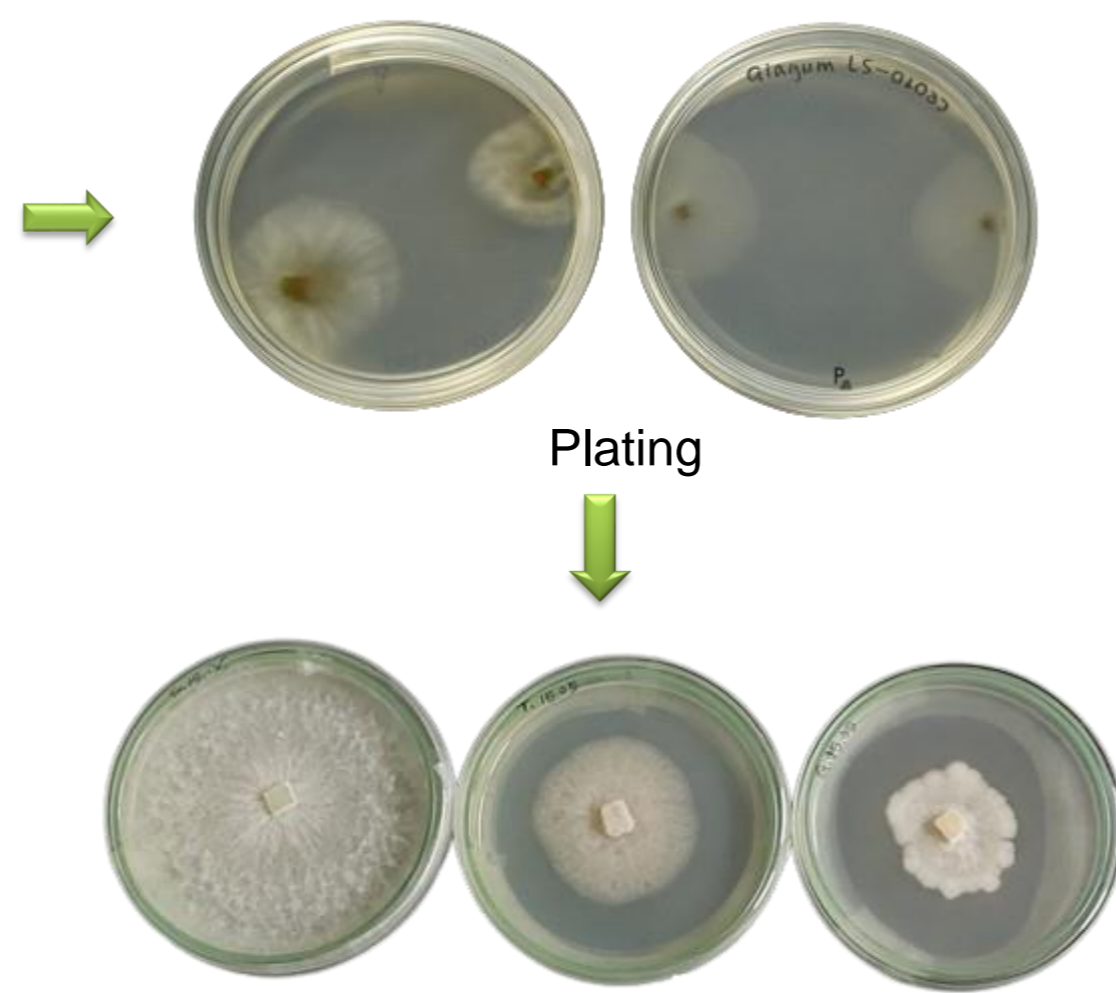
AIM

- To assess the susceptibility of *Dalbergia sissoo* seeds and seedlings to *Colletotrichum gloeosporioides* and other two *Colletotrichum* species, *C. fragariae*, and *C. siamense*.
- To quantify and compare seed germination percentage and seedling mortality rate (In vitro) between the inoculated and control groups

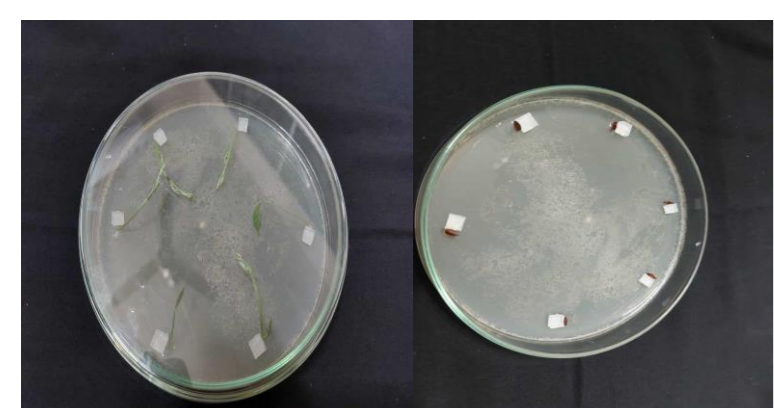
METHOD



Leaf sample



Fungal isolates



Seed Inoculation technique

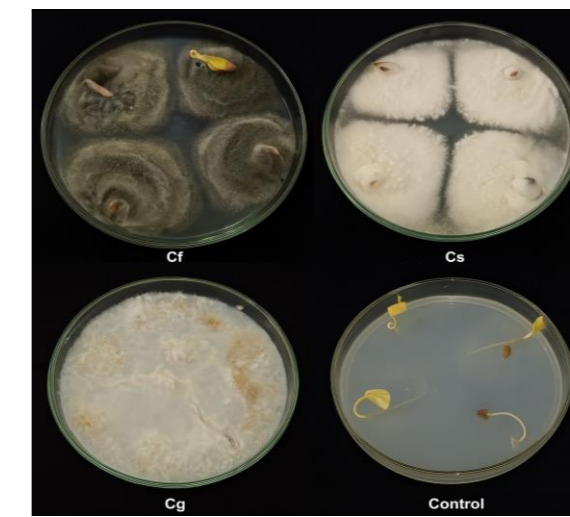


Plating of seeds

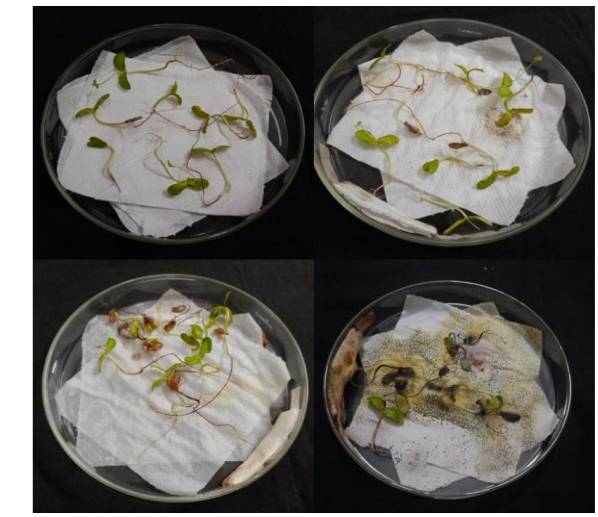
Experiment design:

- 2 experiments (Seed inoculation and Seedling inoculation)
- 3 techniques (Center, base and suspension)
- Data collection (Seed = 14 days ; Seedling = 40 days)
- Statistical analysis is done through r and Microsoft excel.

RESULTS & DISCUSSION



Seeds after 14 days



Seedlings after 40 days

Assessment of Seed Germination Rate

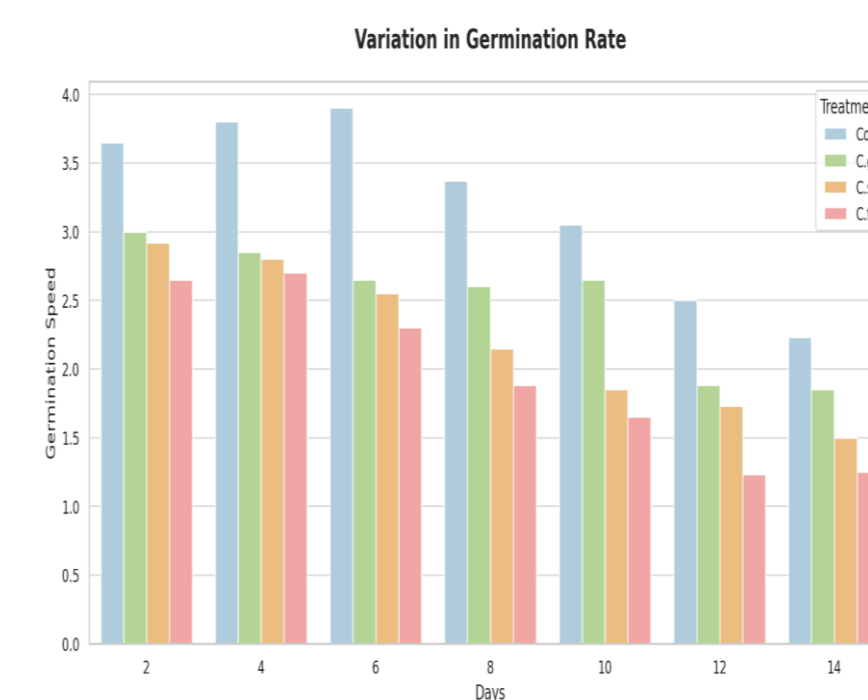


Figure 1: Influence of fungal pathogen on germination rate of *D. sissoo*.

Comparison of Germination Percentage

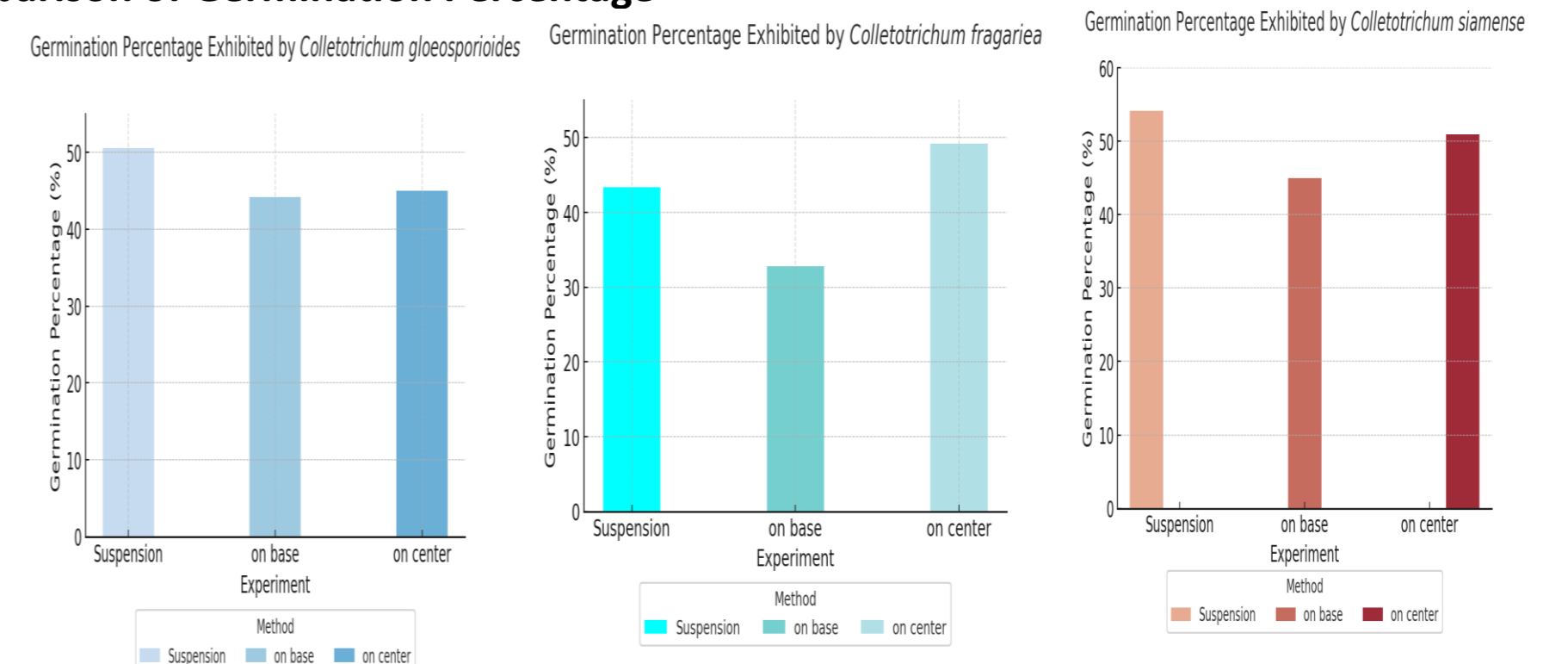


Figure 2: Effect of different pathogenic fungi of *Colletotrichum* genus on the germination percentage of *D. sissoo*

Severity Heat Map(Seedling Mortality)

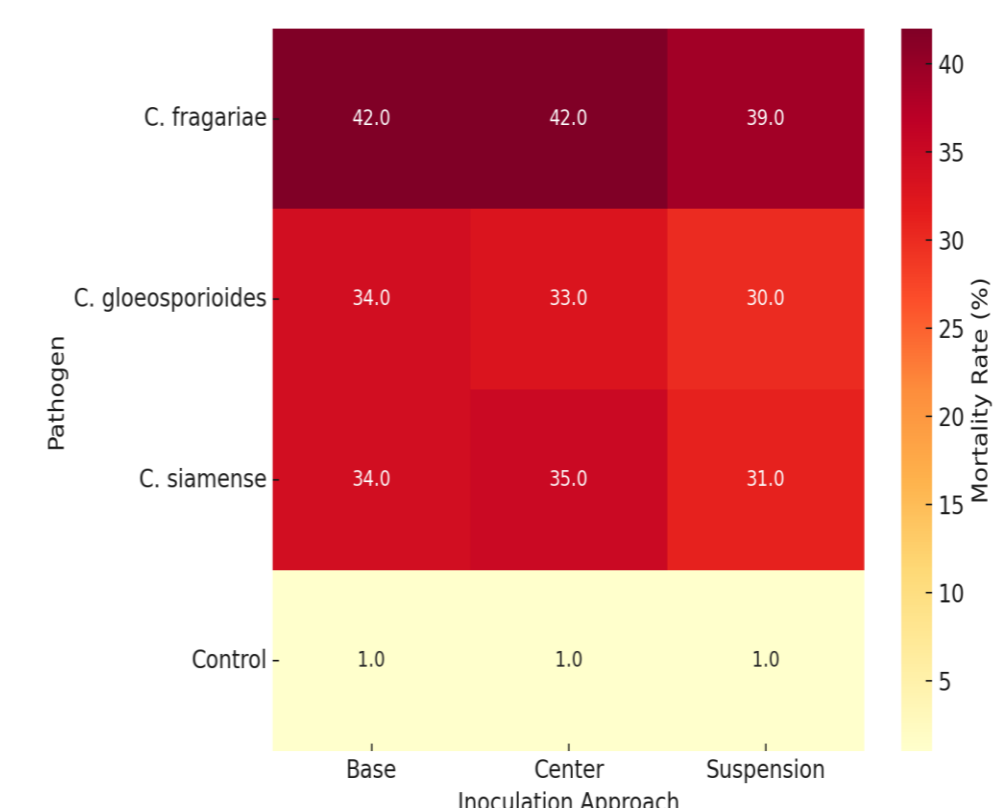


Figure 4.7: Heatmap showcasing the Seedling Mortality caused by pathogens (*C. gloeosporioides*, *C. siamense* and *C. fragariae*)

CONCLUSION

- Seed Germination Impact: *C. siamense* decrease germination significantly (45–54%)
- Seedling Mortality Impact: *C. fragariae* shows highest mortality (~43%) .

FUTURE WORK / REFERENCES

- Biological Control Measures of the pathogens(*C. gloeosporioides* ,*C. siamense* and *C. fragariae*) responsible for disease
- Future direction Resistance Screening and Breeding (*Dalbergia sissoo*) Proteomic Studies