

# Concentration of organic carbon and nitrogen as a key element in modeling fungal interactions in cloud forests

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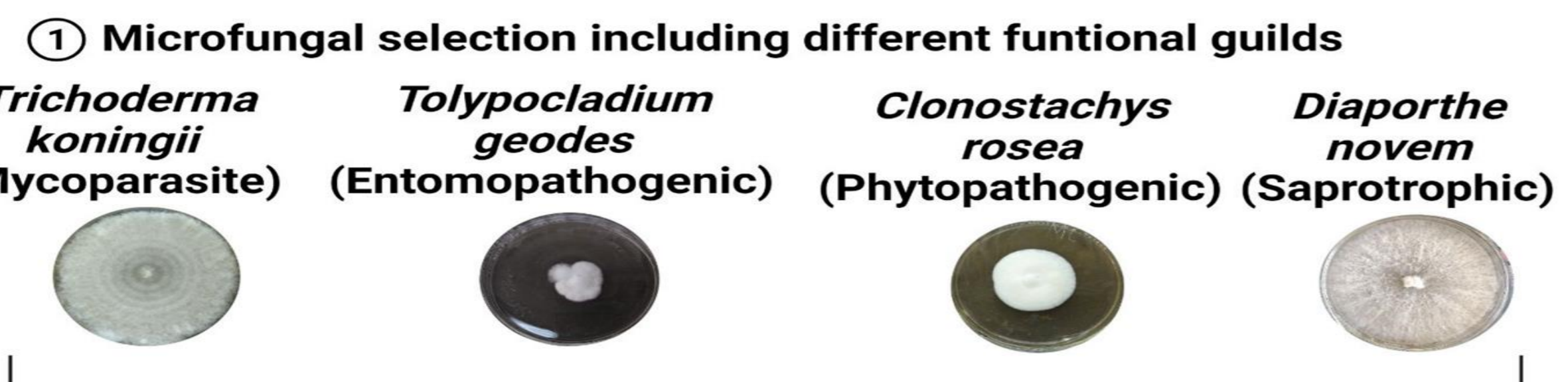
## INTRODUCTION

Cloud forest is characterized by the frequent presence of clouds at vegetation level. This ecosystem has a high levels of species endemism, which contribute with organic matter and nutrients to soil. This forest type is threatened by climate change, illegal logging and conversion to pastures. The land use change to crop could decrease the amount of organic matter and nutrient availability. Moreover, fluctuation environmental conditions plus the occurrence of phytopathogenic fungi could damage the vegetation of cloud forest under climate change scenario. However, the effect of changes in nutrient conditions in fungal-fungal interactions in this ecosystem remains unclear. This information would be useful to predict fungal assemblages under different nutrients scenarios.

## OBJECTIVE

To analyze the effect of different concentrations of organic forms of carbon (C) and nitrogen (N) in paired *in vitro* interactions of fungi from four functional guilds.

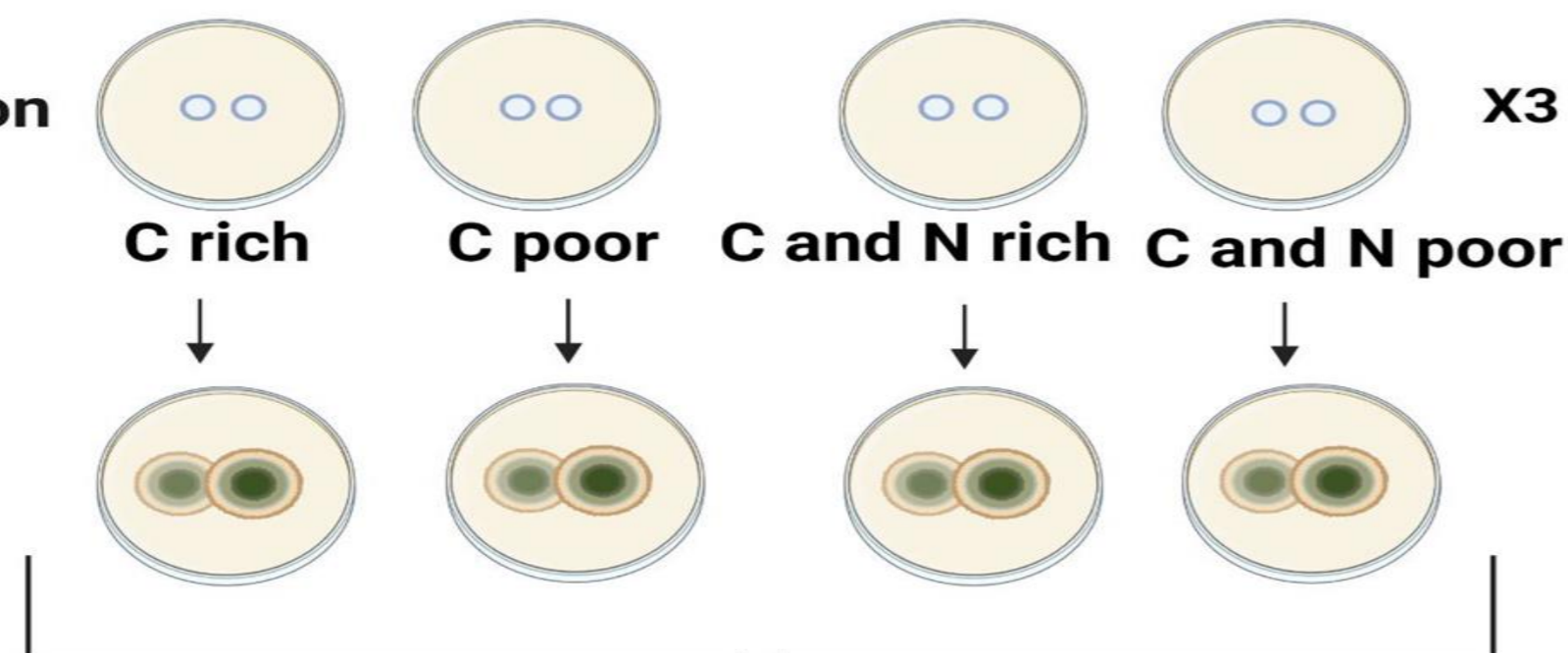
## METHODOLOGY



| Culture medium | C:N ratio |
|----------------|-----------|
| C rich         | 5.8       |
| C poor         | 3.01      |
| C and N rich   | 3.99      |
| C and N poor   | 13.35     |

② Paired *in vitro* bioassays (Day 0)

③ Photodocumentation days 3, 5, 7, 10, 12, 14; image analysis to evaluate fungal growth



④ Calculate interaction index

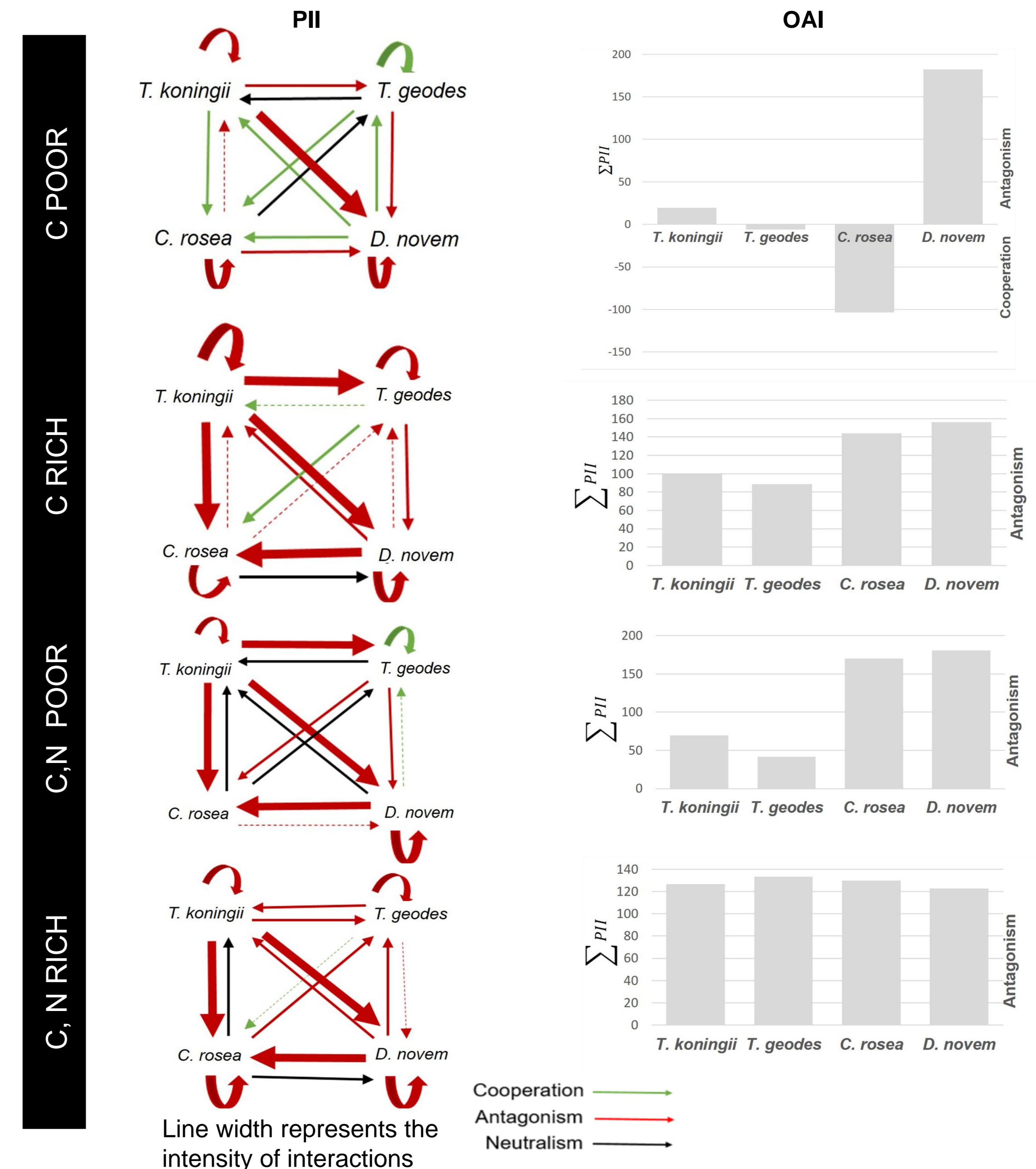
| Interaction index              | Formula  |
|--------------------------------|--|
| Percentage of inhibition (PII) | $PII = \left(1 - \frac{Gi - li}{Gc - lc}\right) (100)$ |
| Overall antagonism index (OAI) | $OAI = \sum PII$                                       |

Gi=Area of interacting species / Gc= Area in controls/  
li= Inoculated area of interacting species/  
lc= Inoculated area in controls

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## RESULTS

What kind of microfungal interactions are established, and how do they change under different nutrient concentrations?



## CONCLUSION

Ecological interactions are important to regulate the populations of phytopathogen fungi as *C. rosea* in carbon rich, carbon and nitrogen rich and, carbon and nitrogen poor culture media.