In vitro antifungal activity of *Eucalyptus staigeriana* and *Eucalyptus globulus* against *Colletotrichum gloeosporioides* (PENZ), causer of grape black rot.

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In Brazil, wine grape cultivation for winemaking is concentrated in the South region, mainly in the Serra Gaúcha - RS, which is responsible for 90% of the domestic wine production (1). However, climatic conditions of this region can be itself unfavorable to the cultivation of the vine due to high rainfall, which usually boosts the development of fungal diseases (2). The grape black rot caused by *Colletotrichum gloeosporioides*, generates great losses in quality and productivity, resulting in high economic losses. The use of chemicals to combat plant disease represents several environmental hazards and alternative control with low impact is required. This study aimed to evaluate the *in vitro* antifungal activity of the essential oils (EO) from *Eucalyptus staigeriana* and *Eucalyptus globulus* against the phytopathogen *C. gloeosporioides.* Leaves of *E. staigeriana* and *E. globulus* were collected in Caxias do Sul and the EO were extracted by steam distillation method from dried leaves for 1 h and analysed by GC/MS for chemical identification. The fungus *C. gloeosporioides* was isolated from grapes grown in Caxias do Sul. The major constituents from OE of *E. staigeriana* were citral (48.3 %) and limonene (17.3 %) and *E. globulus* were 1,8-cineol (64.6 %) and α-pinene (14.5 %). The EO was emulsified with Tween 20 (1:1) and added to the PDA medium autoclaved and fondant (40 ºC) in the concentrations ranging from 0.05 to 0.6 µL mL^{-1}. The culture medium with different concentrations of EO was poured into Petri dishes of 9 cm (Ø), where it was inoculated at the center of each plate a disk of 5 mm (Ø) of a colony of *C. gloeosporioide*s. It was inoculated 3 Petri dishes per concentration and also a control without OE. The experiment was carried out at a temperature of 25 ºC and photoperiod of 12 h for 14 days. The radial mycelial growth of the colonies was measured at the 3rd, 5th, 7th, 10th e 14th day after inoculation. The EO of *E. staigeriana* showed significant inhibition compared to control from the concentration 0.05 µL mL^{-1} and the EO of *E. globulus* showed significant inhibition compared to control from the concentration 0.6 µL mL^{-1}. Transfer experiments were performed in order to make a distinction between the fungistatic and fungicidal effects of the essential oils on the phytopathogen. For this purpose, plug that did not grow were transferred to fresh PDA dishes and their viability and growth were assessed at the 5th day. It was not verified mycelial growth, demonstrating that both essential oils presented fungicidal action. These preliminary results suggest that the EO of *E. staigeriana* and *E. globulus*may be used as an alternative control of *C. gloeosporioides*.

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