II SIMPÓSIO INTERNACIONAL EM INVESTIGAÇÕES QUÍMICO-FARMACÊUTICAS

Itajaí-2019

Área: FMG 20

CHEMICAL COMPOSITION AND ANTIBACTERIAL ACTIVITY OF THE ESSENTIAL OIL FROM *Nectandra grandiflora* Nees. (*Lauraceae*) LEAVES

Jenifer Priscila de Araujo[1]*, Camila Confortin[1], Wanderlei do Amaral[1], Luiz Everson da Silva[1].

[1]*Programa de Pós-graduação em Desenvolvimento Territorial Sustentável, Universidade Federal do Paraná, PR, Brasil* [2]*Departamento de Engenharia Química, Universidade Federal do Paraná, PR, Brasil* *jeniferpri@yahoo.com.br.

INTRODUCTION

The study of essential oils in search of new bioactive compounds has increased significantly in recent years. *Nectandra grandiflora* Nees (*Lauraceae*) species is popularly known as yellow Canela, it is an endemic species of Brazil, found predominantly in Atlantic Forest and Cerrado biomes (LORENZI, 2002). The study carried out by Cunico *et al* (2010) evidenced the antibacterial potential of the species against *Staphylococcus aureus* indicating the presence of bioactive substances. In this study we have analysed the essential oil of *Nectandra grandiflora* Nees (*Lauraceae*) and evaluated the antibacterial potential.

MATERIAL AND METHODS

The plant material was collected in Palmeira, Paraná-Brazil, in March 2019. The leaves of the species were still submitted to hydrodistillation in a Clevenger-type graduated apparatus. The calculation was also performed to verify the yield of the essential oil and the chemical characterization was performed by GC-FID (quantification and retention index) and GC-MS (computer library research) (Adams, 2017, Allured pub). The antibacterial assay against *Staphylococcus aureus*, *Bacillus cereus* and *Escherichia coli* was carried out by agar diffusion method with antibiotic "Tetracycline" as positive control.

RESULTS

The essential oil was obtained in 0.88% of yield and thirteen chemical constituents were identified in the sample. The most abundant constituents were *Nootkatone* (49.10%) and *Eudesm-11-en-4-α, 6-α-diol* (13.22%). In addition, *Zerumbone* (8,69%), *Intermedeol* (5,64%), *Intermedeol<neo* 5,25%, *Isobicyclogermacrenal* (4,07%), *Bicyclogermacrene* (3,65%) and *Valencene* 3.23%) were also identified. The antibacterial assay showed a positive result of the essential oil against *Staphylococcus aureus* bacteria with a halo of 10mm and *Bacillus cereus* with a halo mean 11mm. However, the essential oil was inactive against gram negative bacteria *Escherichia coli.*

CONCLUSIONS

The essential oil of Nectandra grandiflora showed moderate antibacterial activity against a foodborne pathogen (*B. cereus*) and a skin infection (*S. aureus*) strain. Further studies with other strains are necessary to spread the potential of species found in the Atlantic Forest biomes.

REFERENCES

CUNICO, M. M. VIEIRA, G. LIMA, G. CÔCCO, L. C.. YAMOTO, C. AUER, C. G. PEITZ, C. SANQUETTA, C. R. Estudo Preliminar Antimicrobiano e Fitoquímico do Óleo Essencial Foliar da Nectandragrandiflora Ness (canela-amarela). SBQ. Curitiba, nov. 2010.

LORENZI, H. Árvores brasileiras: manual de identificação e cultivo de plantas arbóreas nativas do Brasil. Nova Odessa: Plantarum, 2002.