Essential oils from the leaves and flowers of *Callistemon viminalis*: chemical composition and insecticidal activity.

Thaís A. Sales[1], Maria das Graças Cardoso[1], Jair C. de Moraes[2], Karen C. Camargo[1], Anni C. S. Gomes[1], Danúbia A. de C. S. Rezende[1], David L. Nelson[3], Mariana A. Espósito[1]

[1] Universidade Federal de Lavras, Departamento de Química, Caixa Postal 3037, Campus Universitário, CEP 37200-000, Lavras, Minas Gerais, Brazil.
[2] Universidade Federal de Lavras, Departamento de Entomologia, Caixa Postal 3037, Campus Universitário, CEP 37200-000, Lavras, Minas Gerais, Brazil.
[3] Pró-Reitoria de Pesquisa e Pós-Graduação, Universidade Federal do Vale do Jequitinhonha e Mucuri, CEP 39100-000, Diamantina, MG, Brazil.
marianafarma@hotmail.com

Keywords: escova de garrafa, essential oil, insecticide activity, Myrtaceae.

Popularly known as "escova de garrafa", the species *Callistemon viminalis* belongs to the Myrtaceae family. Many species of this family, especially *C. viminalis*, are an important source of chemical compounds with insecticidal, antifungal, and antimicrobial activities, among others (1). Several studies have been conducted to find natural products that can be used as alternatives for insect control because the synthetic compounds used for this purpose are poorly selective and aggressive towards both man and the environment. The essential oils from the leaves and flowers of *C. viminalis* were characterized chemically, and the insecticidal activity was evaluated. The essential oils were extracted by hydrodistillation using a modified Clevenger (2) apparatus and characterized by GC/MS. The insecticidal activity was evaluated against the aphid *Myzuspersicae* using the no preference method with and without choice (2). The oils were diluted in a solution of water and Tween 80 at 0.1 and 0.5 %. The design for the test with choice was a completely randomized block design (RBD) and that for the no choice test was completely randomized (DIC), using the statistical program SISVAR (3). The major constituents in the essential oils from *C. viminalis* leaves and flowers were 1,8-cineole (67.0 and 69.1 %), α-pinene (16.0 and 18.9 %), limonene (10.0 and 5.9 %) and α-terpineol (2.2 and 1.7 %), respectively. Regarding the insecticidal activity in the free choice test, the essential oil from the flowers, at 0.5 %, was able to influence the preference and reproduction of aphids. These effects did not change over time. The essential oil from the leaves caused a decrease in the mean number adults at 48 h. For the no choice test, the average number of adults was lower for both oils.

1. Oliveira et al. American Journal of Plant Sciences, 2014, **5**, 3551-3557.
2. Teixeira et al. American Journal of Plant Sciences, 2014, **5**, 1181-1190.
3. Fereira, D.F. Ciência e Agrotecnologia, 2011, **35**, 1039-1042.

Acknowledgements: Fapemig, CNPq and CAPES.

ISBN: 978-85-66836-11-0