

**Composition of the essential oil of *Stevia serrata* and *Stevia triflora* from
Guatemala**

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Stevia is a genus of herbs and shrubs native to the New World that belongs to the family Asteraceae (1,2). Its distribution ranges from the southern states of the United States of America to Argentina, including the highlands of Brazil, Mexico, Central American countries, and the South American Andes (3). Of the approximately 230 species in the genus *Stevia*, 16 are reported for the Republic of Guatemala (3,4). The species *S. serrata* and *S. triflora* are reported to have medicinal uses by local inhabitants in ethnobotanical surveys conducted in rural Guatemala. In this research, the flowering aerial parts of *S. serrata* and *S. triflora* were collected from a population found at Aguacatán, province of Huehuetenango, at 1800 masl, in a site surrounded by *Pinus*-*Quercus* species, around 200 km west from Guatemala City. The oil from 70.0 g of dried material of each plant was extracted by hydrodistillation using a Clevenger-type apparatus for 2 h yielding 0.18% and 0.16% (w/w) respectively. GC/MS analyses were performed using a Shimadzu 2010 Plus system equipped with a DB5-MS capillary fused silica column (60 m, 0.25 mm I.D., 0.25 μ m film thickness), and coupled to a Shimadzu QP-2010 Plus selective detector (MSD). The oven temperature program started at 60 °C and increased at a rate of 3 °C/min until reaching 246 °C. Helium (99.999%) was used as the carrier gas, with a flow rate of 1.03 mL/min and a split ratio of 1:50. Mass spectra were obtained at 70 eV, and m/z values were recorded over the range of m/z 40–700 Da. Nitrogen was also used as a carrier gas at a flow rate of 1.44 mL/min. The identification of oil components was based on the evaluation of their mass spectra and retention indices. The compounds found in higher concentration in aerial parts of *S. serrata* were the sesquiterpenes spathulenol (33.6%) and caryophyllene oxide (21.2%), whereas for *S. triflora* the major compounds were caryophyllene (19.9%), β -copaene (17.9%) and trans-nerolidol (18.3%). In previous research, it was shown that the essential oil of *S. serrata* populations with white flowers contained chamazulene as the major compound (5). However, the *S. serrata* population analyzed in the present study had purple flowers and lacked chamazulene, suggesting phenotypic and chemical variation within the species. Regarding *S. triflora*, this is the first report on the composition of its essential oil.

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