"Profile Aromatic of Essential Oil of Ginger (*Zingiber officinale* var. Grand Cayman) Grown in The Region Of Chinantla"

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Ginger (*Zingiber officinale*) is a rhizome native to Asia. In "The Chinantla" region of Oaxaca, Mexico is being cultivated ginger of Grand Cayman variety with high production. The rhizome of ginger is very aromatic, spicy flavor and smell. The main form of ginger marketing is in fresh, dehydrated flakes and powder, oleoresin and essential oil. The aim of this project was to evaluate the aromatic profile by GC/MS of the essential oil of fresh and dehydrated ginger rhizome cultivated in the region of "The Chinantla".

MATERIALS AND METHODS

- Fresh rhizomes were cut into slices of 3 mm and dried on trays at 60 °C with an air flow rate of 3 m/s at 12% moisture.
- The essential oil of fresh and dried ginger was extracted by steam distillation according to AOAC 962.17.
- The volatile compounds were identified by GC-MS using the library NIST.0.8, Kovats indices and standards.

Table 1. Volatile compounds identified in the essential oil of ginger

	Ginger	
Compounds Family	Fresh	Dehydrated
Monoterpenes Hydrocarbons	7	8
Ketones	3	4
Ethers	1	1
Esters	0	2
Alcohols	12	14
Aromatic Hydrocarbons	2	2
Aldehydes	3	3
Sesquiterpenes Hydrocarbons	20	18
Compounds total	48	52

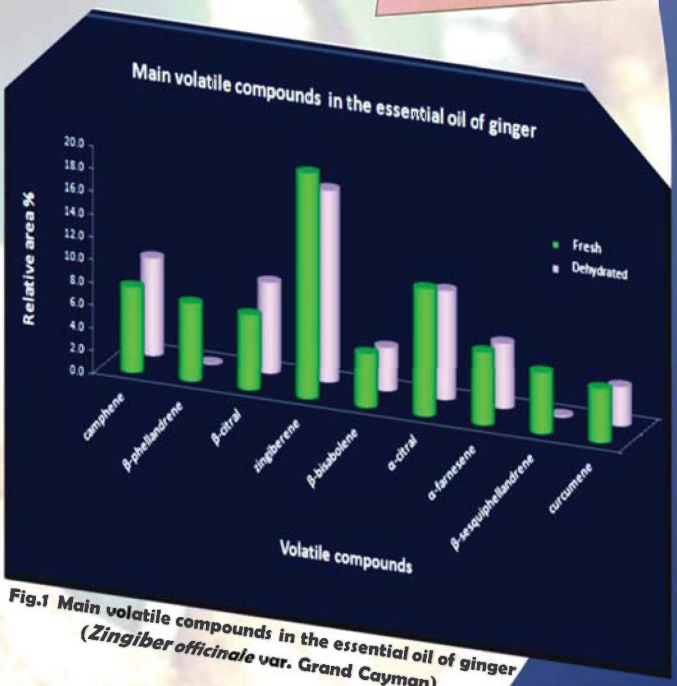

Fig.1 Main volatile compounds in the essential oil of ginger (*Zingiber officinale* var. Grand Cayman)

RESULTS

The yields of essential oil extraction were 0.5% (v/w) for fresh ginger and 1.9% (v/w) for dehydrated. It was identified 48 and 52 volatile compounds, respectively (Table 1). The main volatile compounds for fresh and dried ginger essential oil are shown in figure 1. The higher yield of essential oil extraction obtained from dried ginger could be due to cell damage during dehydration of plant tissue thus facilitating the release of volatile compounds but this decrease the abundance of some volatiles such as zingiberene, β-bisabolene and α-farnesene.

CONCLUSIONS

These results demonstrated that aromatic profile of the ginger essential oil grown in the "The Chinantla" region is similar to that obtained in other countries (China, India, Guinea) according to high presence of sesquiterpenes compounds.

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