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CHEMICAL COMPOSITION OF ESSENTIAL OIL FROM LEAVES OF *Chenopodium ambrosioides* FROM CHANDIGARH, INDIA

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Chenopodium ambrosioides L., commonly known as Mexican tea or American wormwood or West Indian Goosefoot or Epazote (family Chenopodiaceae), is a native of Central and South America and now distributed throughout the tropical parts of the world. It is an aromatic plant with grooved red-colored stem and oblong-lanceolate and toothed leaves, green flowers, and possesses a strong camphoraceous aroma. It often reaches a height up to ~125 cm. The plant has anthelminthic properties [1] and is analgesic [2]. The plant finds use in dysentery and for treatment of rectal bleeding, stomachache, and as a flavoring agent in soups in Mexico [3]. The plant and its oil have been in use since the 18th century to remove intestinal worms – ascarids and hookworms – in humans, cats, dogs, horses and, even pigs [1]. The oil also possesses vermifugal [4], antifungal [5], nematicidal [6], and insect-repellant [7] activity. The anthelminthic properties of the oil are due to the presence of ascaridole – an endoperoxide monoterpene. Generally, the oil with more than 60-70% ascaridole rich fractions is suitable for commercial exploitation. It is still under use in South America as an anthelminthic.

However, excessive use of the oil has toxicological implications and health concerns to humans. Further, the toxicity of the oil depends largely upon its ascaridole content, which varies greatly with the region.

The aim of present study was to explore the chemical composition of essential oil from the leaves of *Chenopodium ambrosioides*.

TABLE 1. Constituents of the *Chenopodium ambrosioides* Leaf Essential Oil

Compound	RI*	% age**
β-Myrcene	1164	1.35±0.031
α-Terpinene	1183	47.37±1.971
dl-Limonene	1203	0.94±0.019
β-Phellandrene	1211	0.11±0.002
cis-β-Ocimene (*Z*)	1235	0.72±0.029
γ-Terpinene	1245	1.56±0.042
trans-β-Ocimene	1252	0.23±0.011
p-Cymene	1271	25.77±1.739
α-Terpinolene	1282	0.13±0.002
β-Caryophyllene	1558	0.77±0.023
trans-*p*-Mentha-2,8-dien-1-ol	1627	0.07±0.005
1-[2-Methyl-5-(1-methylethenyl)cyclopentyl]-(1α,2α,5β)-ethanone	1645	0.16±0.009
Citronellyl acetate	1662	0.04±0.001
3,4-Epoxy-*p*-menthan-2-one	1678	0.07±0.002
γ-Curcumene	1686	0.11±0.002
Piperitone oxide	1708	0.60±0.046
cis-Ascaridole	1714	14.75±0.983
trans-*p*-Mentha-1(7),8-dien-2-ol	1732	0.36±0.013
3,7-Dimethyl-2,6-octadien-1-ol	1758	0.10±0.003
trans-Ascaridole	1828	4.46±0.218

*Based on *n*-alkane series (C_8-C_{32}); **Mean of three replicates.

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Leaves of *C. ambrosioides* upon hydrodistillation yield a golden-yellow to light brownish colored essential oil whose yield was nearly 0.24 % (v/w). GC and GC-MS analysis of the essential oil revealed the presence of 20 chemical components eluted between 4 and 24 min (Table 1). These accounted for 99.67% of the oil.

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