Neyber S.A.S.
Natural & Responsible

It grows from Central America to Argentina, but its highest dissemination occurs in the Amazon region of central and eastern Colombia. Also in semi-arid environments of the areas of Guajira, Magdalena, Cauca, Cundinamarca, Santander and Norte de Santander.

Mobile: (+57) 313 294 5676
Phone: (+57) (1) 231 6074
e-mail: info@neyber.co,
comercial@neyber.co
Bogotá-Colombia

www.neyber.co

HISTORY OF LIPPIA ORIGANOIDES in Colombia

Lippia origanoides (Verbenaceae), also known as "Oregano del Monte" and "Wild Oregano" is a wild plant that grows in Colombia. This species presents high contents of essential oil. Scholars have found important properties present in this plant such as antioxidants, preservatives, and biocides on certain microorganisms.

Pascual [1] and Oliveira [2] indicate that this plant currently has different ethnobotanical uses: culinary as a condiment, medicinal to relieve gastrointestinal disorders, as antiseptic, in respiratory diseases, insecticide, and antigenotoxic.

ECOLOGY

This species grows at altitudes between 500-800 meters above sea level. Oregano species of the genus Lippia are generally recognized as safe for human consumption as natural flavorings and seasoning. Lippia Origanoides as described by Stashenko [3] is an aromatic herb, with the smell of oregano in the majority of chemotypes and occasionally citrus.

Vicuña [4] evaluated the chemical composition of essential oils (EO) obtained from Lippia origanoides collected from the Chicamocha Canyon River in Santander by hydrodistillation assisted by microwave radiation and its protective effect of DNA against bleomycin inducing genotoxicity, providing evidence on the chemopreventive potential of said oil .

About 32 identified compounds are observed in this species and most authors agree that thymol, carvacrol, and p-cymene are the natural phenolic compounds to which antioxidant, antifungal, and antibacterial activities are attributed.

ESSENTIAL OIL LIPPIA ORIGANOIDES NEYBER

Concentration 0,003%-0,02%

INCI NAME: Lippia origanoides Leaf/Flower/Stem Oil

ACTIVES/MARKERS	MAIN CLAIMS	STUDY		SAFETY
		EFFICACY	RESULTS	
Gas cromatography of main components (Thymol 44.0%, Carvacrol 18.0%, p-Cymene 11.5%, γ-Terpinene 6.3%, β-Myrcene 4.5%, Trans-β-Caryophyllene 3.2%)	**ANTIMICROBIAL ANTIOXIDANT**	**Antioxidant activity** Essential oil mixture of chemotypes thymol (LOC) and Carvacrol (LOC) in 1:1 proportion showed higher antioxidant protection (anti- radical) of 88% ; higher than vitamin E and BHT. This work also reports different references regarding safety of Lippia origanoides essential oil [5]. **Antifungal** Cytotoxic and chemical analyses of essential oils of Lippia origanoides H.B.K grown in Colombia: Antifungal activity was determined following the protocols AFST-EUCAST for Candida krusei and C. parapsilosis, and CLSI-M38A for Aspergillus fumigatus and A. flavus. The GC-MS analysis identified three chemotypes: thymol, carvacrol and p-cymene/trans-beta-caryophyllene. The essential oil of the thymol chemotype was the most active in antifungal assays with MIC values of 157.5, 198.4, 125 and 31 µg ml-1 against C. parapsilosis, C. krusei, A. flavus and A. fumigatus, respectively. The major components carvacrol and thymol were not active against A. fumigatus at concentrations below 157.5 µg ml-1. In general, the oils were not cytotoxic. The essential oil of the thymol chemotype of L. origanoides from the region of Boyacá-Colombia showed the highest antifungal activity against A. fumigatus among all the oils and major components tested [6].		1. In vitro citotoxicity study: Eight essential oils of L. origanoides and some of their main components were evaluated in vitro on tumor cell line HeLa and non-tumor cell line Vero to identify tumoural cytotoxic potential. The selectivity index (SI), defned as Vero IC50 on HeLa IC50, it was calculated in order to fnd oil or major components with selective tumor cytotoxic potential. The L. origanoides oil identifed as chemotype trans-f>-caryophyllene/p-cymene showed the highest cytotoxic activity on HeLa cells with IC50 value of 9.1 ± 1 µg/mL and selectivity index of 7.1. the IC50 values were higher than active oil. These results suggest that cytotoxic activities of the oils are not only due to their main components, but to a synergism among its components [7].

MUESTRA	AAO, %	S (n=3)	CV%	Hexanal, ppm	S (n=3)	CV%
Blanco				111	4,4	3,9
LOT (timol)	84	1,1	1,3	8,0	0,3	3,8
LOC (carvacrol)	84	1,3	1,5	7,6	0,5	6,3
LAC (carvona)	74	1,3	1,8	14,3	0,2	1,6
LAC:LOT 1:1	86,3	0,6	0,7	6,2	0,1	1,5
LAC:LOT 2:1	85	3,1	3,6	7	1,7	23,7
LOC:LAC 1:1	85	1,7	2,0	6,8	0,8	11,5
LOC:LAC 2:1	91	4,6	5,0	3	2,8	2,5
LOT:LOC 1:1	88	2,3	2,6	5	1,2	22,2
LOT:LOC 2:1	86	2,6	3,0	6	1,4	22,7
BHT(0,5 mg/g)	75	5,7	7,5	9,1	0,4	3,9
VIT E (5 mg/g)	87	2,0	2,3	5,3	0,4	8,0

Reference:

[1] *Pascual, M. E., et al. "Lippia: traditional uses, chemistry and pharmacology: a review." Journal of ethnopharmacology 76.3 (2001): 201-214.*

[2] *Oliveira, Danilo R., et al. "Chemical and antimicrobial analyses of essential oil of Lippia origanoides HBK." Food Chemistry 101.1 (2007): 236-240.*

[3] *Stashenko, Elena E., et al. "Lippia origanoides chemotype differentiation based on essential oil GC-MS and principal component analysis." Journal of separation science 33.1 (2010): 93-103.*

[4] *Vicuña, Gloria Carolina, Elena E. Stashenko, and Jorge Luis Fuentes. "Chemical composition of the Lippia origanoides essential oils and their antigenotoxicity against bleomycin-induced DNA damage." Fitoterapia 81.5 (2010): 343-349.*

[5] *Orozco M. Comparative study of antioxidant activity (antiradical) of essential oils and extracts of Lippia alba and Lippia origanoides a gel deodorant. (2011) Chemistry School. Universidad Industrial de Santander, Colombia.*

[6] *L. Betancour, et al. Antifungal, cytotoxic and chemical analyses of essential oils of Lippia origanoides H.B.K grown in Colombia. Revista Salud UIS. Vol 43, (2) 2011.*

[7] *B. Zapata, C. Duran, E. Stashenko, J. Correa, L. Betancur. Antifungal, cytotoxic and chemical analyses of essential oils of Lippia origanoides H.B.K grown in Colombia. Revista Salud UIS. Vol 41, (3), 2009.*

Mobile: (+57) 313 294 5676
Phone: (+57) (1) 231 6074
e-mail: info@neyber.co,
comercial@neyber.co
Bogotá-Colombia

www.neyber.co