

Roles of the volatile and non-volatile fractions of thyme (*Thymus vulgaris* L.) essential oil in inhibiting *Fusarium graminearum* growth and trichothecene mycotoxin production

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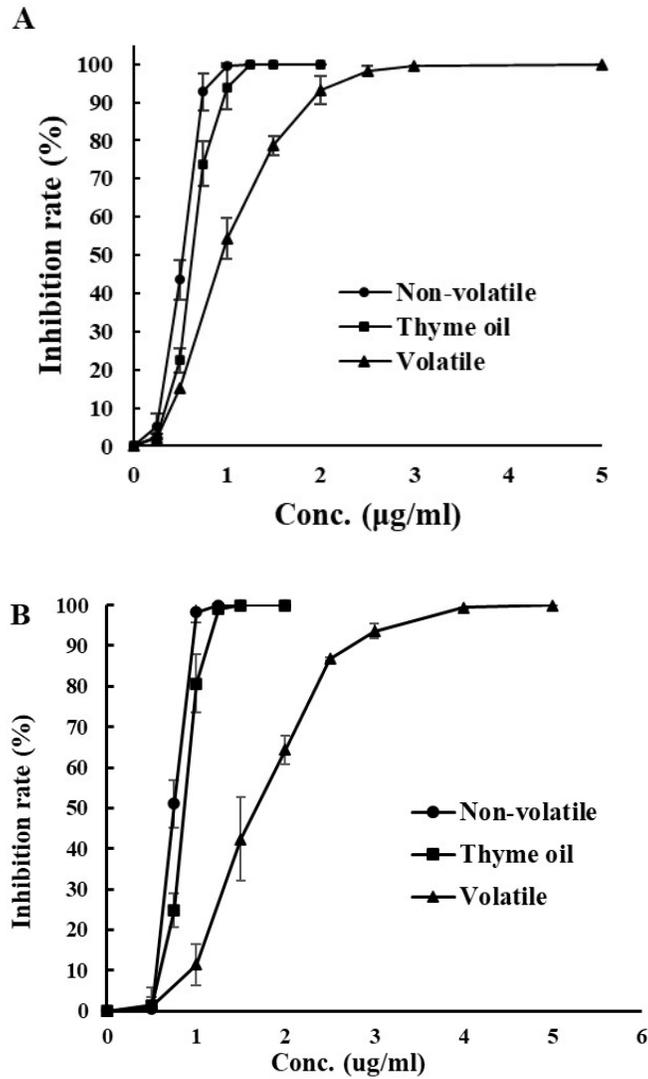


Figure S1. Spore germination inhibition (SGI) rate of EOs obtained from thyme oil and the volatile and non-volatile fractions against A) *Fusarium graminearum* 10-124-1 and B) *Fusarium graminearum* 10-125-1.

Table S1 Relative contents (%) of most detected components in volatile and non-volatile thyme essential oil separated by SAFE at 30, 40 and 50 °C respectively.

Components	Volatile (%)			Non-volatile (%)		
	30°C	40°C	50°C	30°C	40°C	50°C
α -Pinene	10.01 \pm 0.35	9.19 \pm 0.42	7.94 \pm 0.23	2.90 \pm 0.10	2.51 \pm 0.11	1.18 \pm 0.13
Camphene	3.35 \pm 0.10	3.06 \pm 0.07	2.25 \pm 0.14	1.09 \pm 0.03	0.94 \pm 0.03	0.35 \pm 0.03
β -Myrcene	5.00 \pm 0.17	4.56 \pm 0.23	4.08 \pm 0.07	1.23 \pm 0.04	1.05 \pm 0.21	0.57 \pm 0.05
Eucalyptol	2.10 \pm 0.10	2.37 \pm 0.12	2.74 \pm 0.03	2.06 \pm 0.10	1.93 \pm 0.11	1.69 \pm 0.08
γ -Terpinene	35.05 \pm 0.60	33.40 \pm 0.89	29.67 \pm 0.77	5.78 \pm 0.10	4.41 \pm 0.02	3.35 \pm 0.23
p-Cymene	23.88 \pm 0.74	23.99 \pm 0.36	24.99 \pm 0.42	30.53 \pm 0.95	26.30 \pm 0.54	13.66 \pm 0.83
Linalool	3.56 \pm 0.21	4.83 \pm 0.28	6.42 \pm 0.20	9.98 \pm 0.59	11.59 \pm 0.59	13.02 \pm 1.34
d-Camphor	1.05 \pm 0.04	0.85 \pm 0.01	0.67 \pm 0.14	2.21 \pm 0.08	2.59 \pm 0.10	3.29 \pm 0.54
Terpinen-4-ol	0.34 \pm 0.01	0.51 \pm 0.02	0.81 \pm 0.09	2.39 \pm 0.05	2.41 \pm 0.05	3.38 \pm 0.04
Caryophyllene	0.73 \pm 0.01	0.86 \pm 0.11	0.92 \pm 0.05	1.69 \pm 0.03	2.60 \pm 0.33	2.80 \pm 0.04
Isoborneol	0.30 \pm 0.01	0.42 \pm 0.01	0.62 \pm 0.02	1.17 \pm 0.05	1.28 \pm 0.01	1.46 \pm 0.01
endo-Borneol	0.32 \pm 0.02	0.47 \pm 0.03	0.75 \pm 0.09	2.07 \pm 0.11	2.19 \pm 0.03	2.79 \pm 0.03
Thymol	10.29 \pm 0.34	12.80 \pm 0.23	15.41 \pm 0.81	27.59 \pm 0.91	30.94 \pm 1.02	42.62 \pm 0.30
Carvacrol	0.59 \pm 0.03	0.93 \pm 0.02	1.36 \pm 0.23	5.59 \pm 0.26	5.76 \pm 0.25	6.77 \pm 0.10
Total	96.58	98.25	98.53	96.28	96.50	96.93

Table S2 Primers used for qRT-PCR analysis in this study.

Primer name	Primer sequence (5'-3')
Ef α 1-F	ACGTTTCCGTCAAGGACATC
Ef α 1-R	CTTGGAGGGAACCATCTTGA
Tri3-F	GTTCGAGCTGGCTTTGGTAG
Tri3-R	GGGATTGGTGTGCGAGTCTGT
Tri4-F	CGGTGTGCATGAAATAGGTG
Tri4-R	TCCCTTACCTGAACGGTGTC
Tri5-F	GTCATTGTGTTGGGGCTTCT
Tri5-R	GTCATTGTGTTGGGGCTTCT