

SUPPLEMENT FILE

Table I. Inhibition zone clove and cinnamon essential oils

	Clove Essential Oils						Cinnamomum Essential Oils					
	1%	2%	3%	4%	5%	10%	1%	2%	3%	4%	5%	10%
Inhibition Zone (mm)	0.00	3.36	3.44	4.80	6.00	9.80	5.20	8.22	7.20	6.66	7,54	15.02
Average	0.00	1.90	4.48	4.20	5.20	8.58	5.30	12.28	12.86	14.20	14.20	22.30
SD	0.00	0.00	2.42	5.20	4.68	8.80	9.20	7.62	11.70	15,56	17.20	21.76
	0.00	1.753	3.447	4.733	5.293	9.060	6.567	9.373	10.587	12.140	12.980	19.693
	0.00	0.168	0.103	0.050	0.066	0.065	0.228	0.254	0.299	0.479	0.494	0.406

Table II. Results of the antibacterial activity testing of the nanoemulsion combining clove and cinnamon essential oils

Sample (2% Clove + 3% Cinnamon)	Inhibition Zone (mm)
1	24
2	25

Table III. Optimization results of the nanoemulsion formulation combination of clove and cinnamon essential oils

No	T80 (%)	PEG 400 (%)	T (%)	P.S.	PdI	D
1	40,000	10,000	99,452	12,270	0,107	0,997*
2	30,465	19,535	98,926	14,681	0,196	0,994

* comparison of selected Tween 80 and PEG 400; T 80 (Tween 80); T (Transmittant); P.S. (Particle Size); PdI (Particle distribution index); D (Desirability)

Table IV. Test results for the strength and stability of the nanoemulsion liquid soap foam combination of clove and cinnamon essential oils

Replication	Initial Height (cm)	Final High (cm)	Foam Stability (%)
1	5.3	4.4	83.02
2	5	4.2	84.00
3	5.5	4.5	81.82

Table V. Storage stability of the optimum formula of liquid nanoemulsion soap based on a combination of clove and cinnamon essential oils

Day	Visual	pH	Viscosity (cP)
0	V	5,196 ± 0,047	2607,666 ± 0,577
8	V	5,193 ± 0,035	2606,333 ± 0,577
15	V	5,120 ± 0,060	2606,333 ± 1,154
22	V	5,106 ± 0,080	2606,000 ± 1,000
30	V	5,100 ± 0,050	2604, 333 ± 1,527

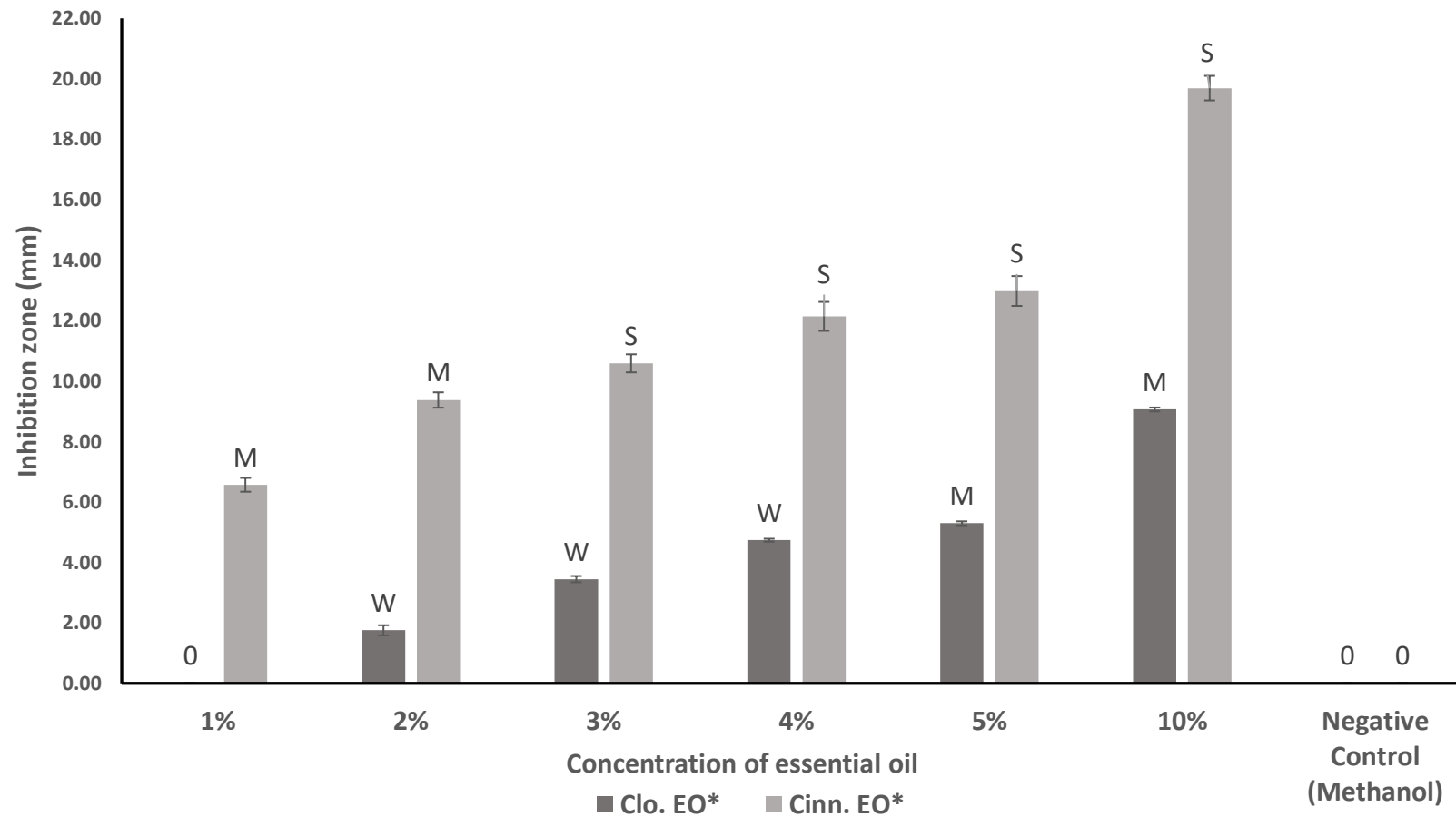


Figure 1. Diameter of the inhibition zone for clove and cinnamon essential oils *Clo. EO (Clove Essential Oils); **Cinn. EO (Cinnamomum Essential Oils). W for weak (<5 mm); M for moderate (5–10 mm); S for strong (10–20 mm); 0 for zero, has no antimicrobial activity



Figure 2. Physical appearance of the nanoemulsion liquid soap combination of clove and cinnamon essential oils