PHYTOCHEMICAL PROFILE, TOXICITY AND ANTIOXIDANT ACTIVITY OF *Aloysia gratissima* (Verbenaceae)

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Table 1S. DPPH-scavenging activity, total content of polyphenols (TP), flavonoids (TF) and carotenoids (TC) of *A. gratissima* according to the harvesting season[a]

Season	DPPH-scavenging activity[b]	TP[c]	TF[d]	TC[e]
Summer	89.31±0.34a	10.61± 0.83a	0.75±0.02a	5.14± 0.69a
Autumn	88.50±0.57a	21.84± 1.73b	1.98 ±0.06c	18.93± 0.50c
Winter	89.07±1.36a	22.23± 2.14b	1.33±0.03d	12.94± 0.98b
Spring	89.63±0.39a	12.95± 1.05a	1.46±0.02b	10.84± 1.73b
BHT[f]	59.35±0.25b	-	-	-
Ferulic acid[f]	92.40±0.25c	-	-	-

[a] DPPH-scavenging activity, total content of phenolic, flavonoids and carotenoids are expressed as mean of three determinations ± SD. [b] Values expressed as % discoloration. [c] Values expressed as mg GAE g^{-1} extract. [d] Values expressed as mg QE g^{-1} extract. [e] Values expressed as mg β-caroteneE g^{-1} extract. [f] Comercially BHT and ferulic acid were used as a reference. Different letters in the same column represent significant differences ($P < 0.05$) within seasons.

Table 2S. Phenolic compounds of the aqueous extracts of *A. gratissima*, according to the harvesting season, determined by RP-HPLC-UV-visible. The phenolic fraction of the aqueous extract was obtained by liquid-liquid extraction with ethyl acetate (for details see Experimental)[a]

Compounds[b]	Retention time[c]	Summer	Autumn	Winter	Spring
Unknown[d]	5.64	4.77±2.55a	1.71±0.05b	5.42±3.34a	3.70±0.31a
Gallic acid	5.78	5.61±0.36a	5.40±0.06a	6.24±0.18b	7.89±0.11c
Protocatechuic acid	6.70	6.75±0.56a	5.03±0.78a	6.42±0.44a	3.09±0.18b
Chlorogenic acid	9.88	6.29±0.19a	4.93±0.20c	5.27±0.13b	5.86±0.41b
p-Hydroxybenzoic acid	10.49	3.45±0.11a	2.62±0.06b	3.51±0.04a	3.37±0.14a
Vanilic acid	11.62	3.86±0.08a	2.42±0.04c	2.22±0.31c	3.08±0.09b
Syringic acid	12.59	0.52±0.00a	1.39±0.06c	0.33±0.02d	0.70±0.05b
Caffeic acid	14.35	0.67±0.1a	3.69±0.69c	8.83±0.01d	1.10±0.14b
p-Coumaric acid	16.75	10.67±0.74a	9.46±0.03a	ND	16.06±1.02b
Ferulic acid	17.873	11.57±1.23a	46.95±2.65c	86.40±2.21d	20.88±0.19b
trans-Cinnamic acid	31.084	7.97±0.24a	40.04±3.99c	56.92±2.18d	11.13±0.06b
Total		62.13	124.47	181.56	76.86

[a] Values are means of three determinations ± SD. Different letters in the same row represent significant differences ($P < 0.05$). [b] Values are expressed as mg 100 g^{-1} plant extract. [c] Values are expressed as minutes of retention time. [d] Unknown compound is expressed in mg GAE g^{-1} extract. [e] ND: not detected.

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Table 3S. HPLC profile of carotenoids obtained from saponified extracts of *Aloysia gratissima* troughout the seasons[a]

Compound[b]	Retention time (min)	Summer	Autumn	Winter	Spring
Lutein	4.21	0.30±0.00a	1.01±0.00 c	1.30±0.01d	0.88±0.01b
Zeaxanthin	4.64	0.16±0.00a	0.63±0.01 c	0.75±0.00 d	0.53±0.02b
β-Criptoxanthin	8.08	0.01±0.00a	0.07±0.01c	0.11±0.00d	0.05±0.01b
trans-β-carotene	12.24	0.24±0.00a	1.18±0.05c	1.86±0.00d	0.91±0.01b
α-carotene	13.21	0.03±0.00a	0.32±0.07b	0.57 ±0.01c	0.28±0.02b
Total		0.74	3.21	4.59	2.65

[a] Values are means of three determinations ± SD. Different letters in the same row represent significant differences ($P < 0.05$). [b] Values are expressed as mg luteinE g^{-1} extract.

Table 4S. Average climate data measured in the preceding month of the harvest time of *A. gratissima*'s aerial parts[a]

Season of harvest	Minimum temperature (°C)	Maximum temperature (°C)	Relative humidity (%)	Accumulate rain (mm)	Rainy days
Summer (Mar)	21.85	31.71	73	91.5	12
Autumn (May)	13.56	24.56	72	26.3	06
Spring (Nov)	19.2	27.65	76	167.3	16
Winter (Aug)	13.62	21.43	81	99.2	10

[a] Data obtained from CIRAM/EPAGRI (Florianópolis – Santa Catarina, Brazil).

Table 5S. Effect of aqueous extract of *Aloysia gratissima* on blood and hematograms parameters in acute toxicity

	Control	*Aloysia gratissima* (mg kg^{-1})				
Parameters	Distilled water	100	250	500	1000	2000
AST[a]	131.24±22.31	169.72±31.31	193.24±34.86	92.86±26.81	173.60±31.99	117.25±19.12
ALT[b]	58.98±5.34	52.80±4.48	70.78±8.39	39.84±3.41	100.66±23.59	79.85±19.16
Total proteins (g dL^{-1})	7.92±0.09	8.13±0.35	7.47±0.42	7.74±0.33	7.08±0.15	7.22±0.45
Cholesterol (mg dL^{-1})	74.01±2.92	63.29±3.09	72.81±4.43	77.42±9.57	63.61±2.00	79.90±2.23
Glucose (mg dL^{-1})	151.08±10.12	153.80±14.85	193.88±25.16	142.48±6.09	142.56±8.99	167.25±10.24
Haemoglobin (g dL^{-1})	16.92±0.45	13.70±3.06	15.42±0.79	14.40±2.72	17.25±0.79	17.02±0.96
Haematocrit (%)	43.26±1.78	36.20±8.90	40.74±1.45	38.02±6.99	35.10±2.07	39.00±2.49
Red cells (1 x 10^9 mm^{-3})	8.69±0.26	7.33±1.69	8.27±0.02	7.18±1.25	7.63±0.44	7.93±0.33
White cells (1x10^9 mm^{-3})	14.94±1.75	11.60±5.38	8.94±0.85	9.00±2.11	10.35±0.79	7.05±0.66
Platelets (1 x 10^9 mm^{-3})	567.60±84.70	659.00±217.73	698.40±115.61	792.00±9.49	878.25±126.55	1105.50±161.22

Date are expressed as mean SEM, n=5. No statistical difference between control and *Aloysia gratissima* ($P > 0.05$). [a] Aspartate transaminase (U L^{-1}). [b] Alanine transaminase (U L^{-1}).