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**INVESTIGATION ON GROWTH POSSIBILITY AND  
COMPARISON OF AGRONOMIC AND PHYTOCHEMICAL  
ATTRIBUTES OF CHAMOMILE (*MATRICARIA CHAMOMILLA* L.)  
POPULATIONS FROM THREE NATURAL HABITATES OF IRAN IN  
BOUSHEHR PROVINCE**

(*Matricaria chamomilla* L.)

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USP-20

(HPLC)

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(maghaalikhani@modares.ac.ir)

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Chamazulene	Active substances	Flavonoids	Sesquiterpene	Asteraceae
Methoxylated and glycosylated	flavonoids	Chemotype	Pharmacopeias	Apigenin
	'Sorok Sari'	German chamomile	Apigenin conjugations	

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Biological yield	Phenotype	$\alpha$ - bisabolol oxide A	$\alpha$ - bisabolol
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Table 1. Meteorological parameters of research location during growth season of chamomile (2007–2008).

Mar/Apr	Feb/Mar	Jan/Feb	Dec/Jan	Nov/Dec	Oct/Nov	Meteorological parameters
31.9	25.9	21.4	16.5	20.6	31.8	( ) Maximum temperature (°C)
18.8	13.5	11.7	7.6	10.2	19.6	( ) Minimum temperature (°C)
44.3	1.6	64.1	45.8	113.7	21.8	( ) Mean precipitation (mm)
66.3	73.0	86.0	91.0	79.1	57.5	( ) Maximum relative humidity (%)
25.9	32.0	51.0	61.0	46.5	25.6	( ) Minimum relative humidity (%)
168.7	216.9	197.2	153.5	180.1	206.5	Mean sun time ( )
7.7	5.9	4.2	2.4	3.1	6.8	Mean transpiration (mm)
24.0	10.0	9.0	9.0	7.0	10.0	( ) Wind speed (ms <sup>-1</sup> )

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UV/Vis )

UV Detector: K- 2501) HPLC Knuver USP-20 ( x-Ma 2000

(Degasses: knuver Pump: k-1001 λ: 335 nm Column C18: 4mm ×12.5cm

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(C)

$$C = \frac{30 \times 10 \times E \times 1843}{420 \times 1000} \times 100$$

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Spectrophotometer	Clevenger	Apigenin 7-glucoside	Rosette
Ultra violet detector	High performance liquid chromatography	United State Pharmacopeia	

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Table 2. Altitude, soil texture and soil chemical characteristics of research location.

( ) (m) Altitude	Soil texture	Available K (ppm)	Available P (ppm)	Total N %	OC %	pH	EC ds m <sup>-1</sup>
100	Loam	227	22.2	0.07	0.69	7.12	5.4

Duncan multiple range test

Table 3. Mean comparison of chamomile population for essential oil and active substances.

(%) Chamazulene in dry flower (%)	(%) Chamazulene in essential oil (%)	(%) Essential oil content (%)	( ) Apigenin 7- glucoside(mg ml <sup>-1</sup> )	← Traits Population ↓
0.015b	3.691b	0.408a	0.070a	Boushehr
0.013c	3.464b	0.384a	0.057b	Fars
0.038a	13.812a	0.278a	0.067ab	Esfahan

† Means with the same letters are not significant at the 5% level of probability using DMRT.

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Diploide	Tetraploide	Less continental region	Most continental region
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