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***Rosa foetida* Herrmann**

**GROUPING THE *ROSA FOETIDA* HERRMANN ACCESSIONS OF IRAN
BY USING CLUSTER ANALYSIS BASED ON POLYMORPHISM OF
MICROSATELLITE MARKERS**



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Section Rose

R. foetida

R. foetida Bicolor *R. foetida* () *R. foetida*
R. (G15 G14) *foetida*
 (G13)

R. foetida

Table 1. Collection sites of *R. foetida*.

<i>R. foetida</i>			
Type of <i>R. foetida</i>	Place	Province	Code of genotype
Main	Shahrestanak	Tehran	G1
Main	Gajereh	Tehran	G2
Main	Qazvin	Qazvin	G3
Main	Ishlagh	East Azarbayejan	G4
Main	Ahar	East Azarbayejan	G5
Main	Velayatrood	Tehran	G6
Main	Miyaneh	East Azarbayejan	G7
Bicolor	Ishlagh	East Azarbayejan	G8
Bicolor	Sanandaj	Kurdestan	G9
Main	Sanandaj	Kurdestan	G10
Double	Ishlagh	East Azarbayejan	G11
Double	Ardebil	Ardebil	G12
Main	Hamedan	Hamedan	G16
Main	Sanandaj	Kurdestan	G17

DA
DNA

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PCR (NED, HEX, FAM)
(Westburg, The Netherlands)
(PCR)

ABI
Prism 3700 DNA Analyzer
(Applied Biosystems) Genotyper 3.5 NT
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NTSYS 2.1
SPAGeDi 1.2
NTSYS 2.1 UPGMA

R. foetida DNA
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RhD221 RhP50
() UPGMA

Dice Sephedex G50 Qiagen DNeasy Plant Minikit, Westburg, The Netherlands

r= /

UPGMA

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Table 2. Characteristics of microsatellites and their related genetic diversity.

Heterozigosity	Size of the bands	Number of amplified bands	Chromosome	Marker
0.57	124, 135,138,140	4	n.d [†]	RhP518
0.36	201,249,252	3	4	RhAB40
0.56	259, 261,265, 269	4	1	RhO517
0.67	192,198,213	3	3	RhEO506
0.07	217, 223	2	4	RhD221
0.7	151,155,161, 165, 169, 185	6	7	RhAB73
0.73	194,195,197, 198,201,202,204	6	n.d	RhD201
0.53	117,119, 128	3	n.d	RhB303
0.57	165,168,174,177,183	5	6	RhE2b
0.71	257,266,287, 293, 302, 332,344	7	3	RhP50
0.5476		4.3		Average

† Not identified

†

R. foetida Bicolor

R. foetida

(G14)

Genotyper

R. foetida

RhEO506

R. foetida

Biplot

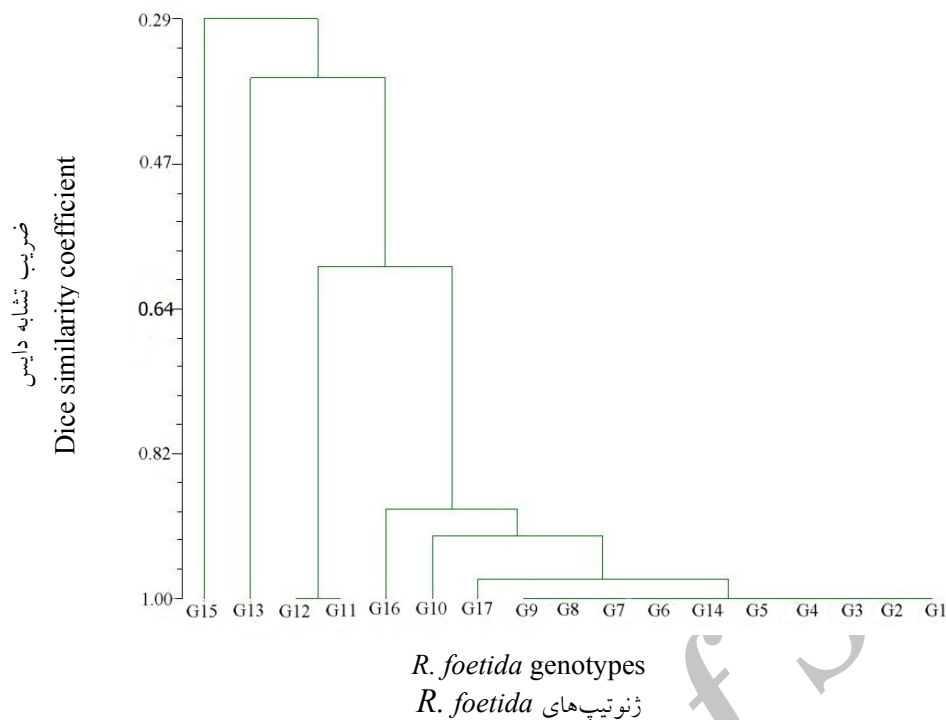


Fig. 1. UPGMA cluster analysis of *R. foetida* accessions using 10 microsatellite markers based on Dice similarity coefficient.

UPGMA *R. foetida*

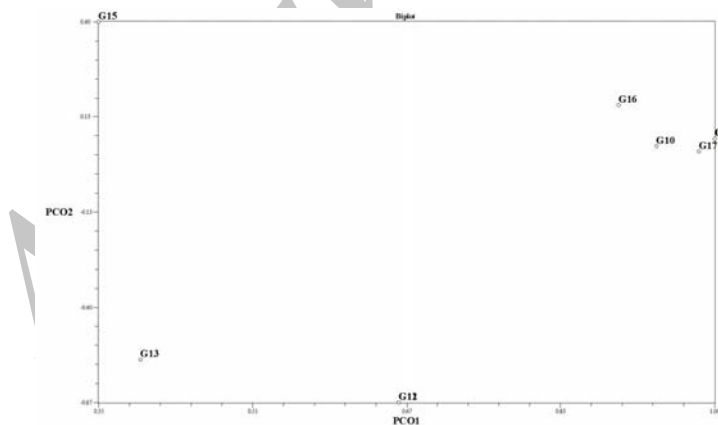


Fig. 2. Biplot analysis of 17 *R. foetida* genotypes using two main factor resulting from factor analysis.

† G14 is representative of 10 accessions which have the same profile and G12 is representative of two similar accessions.

R. foetida

G12

G14 †

() G16 G10 G17
 (G12 G11) *R. foetida*
 (G15, G13)
 G15
 (/) G17 () G13
 () (/) G15

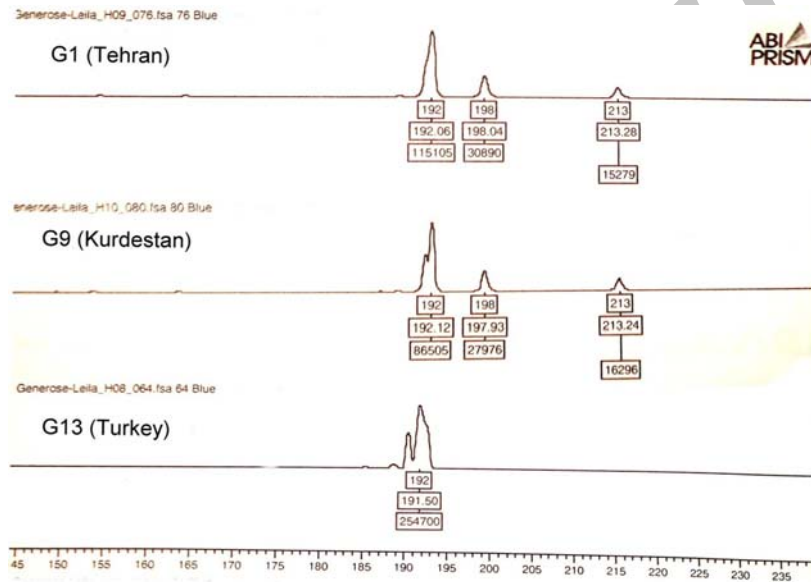


Fig. 3. Microsatellite peaks (alleles) of RhEO506 locus of 3 *R. foetida* genotypes.

† The numbers on the axis represent the size of the alleles. Peaks which are laid vertically in one line show the same alleles in different genotypes. For instance allele 192 bp is presented in all tree genotypes.

G13 G9 G1) *R. foetida* RhEO506 ()

†

*R. foetida*Table 3. Similarity matrix of *R. foetida* genotypes based on Dice similarity coefficient.

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17
G1	1.00																
G2	1.00	1.00															
G3	1.00	1.00	1.00														
G4	1.00	1.00	1.00	1.00													
G5	1.00	1.00	1.00	1.00	1.00												
G6	1.00	1.00	1.00	1.00	1.00	1.00											
G7	1.00	1.00	1.00	1.00	1.00	1.00	1.00										
G8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00									
G9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
G10	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	1.00							
G11	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.60	1.00						
G12	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.60	1.00	1.00					
G13	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.31	0.44	0.44	1.00				
G14	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.61	0.61	0.34	1.00			
G15	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.36	0.11	0.11	0.00	0.34	1.00		
G16	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.81	0.41	0.41	0.40	0.90	0.28	1.00	
G17	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.90	0.63	0.63	0.36	0.98	0.35	0.87	1.00

R. foetida

(/)

RhP50

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G13

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RhD221

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R.

R. foetida

foetida

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R. foetida

R. foetida

R. foetida

R. foetida

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R. foetida

R. foetida

R. foetida 'Bicolor'

R. foetida

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SSRs AFLP RAPD

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() *Rosa hybrida*

(G12 G11) *R. foetida*

R. foetida

R. foetida

R. foetida

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