

( )

**RAPD**

**(*Juglans regia* L.)**

\*

( // : // : )

**RAPD**

**RAPD**

/ /

%

**JAHANI NFE5 NFE3**

**CCGM1**

**RAPD**

**RAPD**

:

(www.fao.org)

*Juglans regia* L.

(Juglandaceae)

(Potter et al., 2002)

(Mace et al., 1999)

(Sarkhosh et al., 2005)

RAPD

DNA

DNA

RAPD

RAPD

PCR

RAPD (Garcia et al., 2002)

( )

RAPD

DNA

Murry & Thompson

RAPD (1980)

OPERON

(1998) Nicese et al.

(Justus et al., 2004)

(dNTPs) Taq DNA polymerase  
MgCl<sub>2</sub> ( ) PCR

RAPD

(Sarkhosh et al., 2005; Garcia et al.,

RAPD .2002)

$\mu\text{l}$   
dNTPs / mM MgCl<sub>2</sub> / mM X  
ng *Taq* /  $\mu\text{M}$

(DNA)

(PCR)

$^{\circ}\text{C}$   $^{\circ}\text{C}$

$^{\circ}\text{C}$   $^{\circ}\text{C}$

$^{\circ}\text{C}$   $^{\circ}\text{C}$

$^{\circ}\text{C}$   $^{\circ}\text{C}$

$^{\circ}\text{C}$   $^{\circ}\text{C}$

Bio-Rad

/ PCR

TBE

/  $\mu\text{g/L}$

(Woeste et al., 2002)

RAPD (1998) Nicese et al.

RAPD

(Dirlewanger et al., 1998)

- 
1. Introgression
  2. Tris Boric Acid EDTA

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:

UV DNA

RAPD

( × )

NTSYS

(Ver 2.02)

(Woeste et al., 2002)

UPGMA

(Ver 2.1) NTSYS

(Atefi, 1993)

CCGM1 NFE9 BFE4 BFE1

(McGranahan et al., 1998)

/

/

COKH5 BFE3

BFE4 COKH5

- 
- CODK4
  - CCGM1
  - COKH5
  - CCEM1
  - CCHA2
  - COYK5
  - CCGM2
  - NFE1
  - NFE2
  - NFE3
  - NFE4
  - NFE5
  - NFE6
  - NFE7
  - NFE8
  - NFE9
  - NFE10
  - BFE1
  - BFE2
  - BFE3
  - BFE4
  - BFE5
  - BFE6
  - JAHAN1
  - JAHAN2
  - SERR
  - VINA
  - Z30
  - K72
  - FRANQUETE
  - LARA
  - JAHAD
  - ZIAABAD
  - DANESHKADEH
  - MIANEH
- 

1. Jaccard's similarity coefficient

/	/				
/	/	/	/	/	cm
/	/	/	/	/	cm
/	/	/			
/	/	/			
/	/	/			
/	/	/	/	/	mm
	/	/			
/	/	/			
/	/	/	/	/	
/	/	/	/	/	mm
	/	/	/	/	mm
/	/	/			
/	/	/			
	/	/			
	/	/			
/	/	/			
/	/	/			
/	/	/	/	/	

/

/ COKH5

Z30

.( )

/

.(Simioniuc et al., 2002)

-

NFE8 NFE2 NFE10 JAHAD

RAPD

NFE5 NFE1

( )

NFE6

%

JAHAN1

(McGranahan et al., 1998)

/

/

JAHAN2

(% )

CCGM1

RAPD

DNA

DNA

( )

/ /

OPK19

OPN19

( ) OPAA19

(% )

%

NFE7

NFE3 ( / )

BFE6

(% ) NFE8

NFE8 NFE7 ( / )

(1998) Nicese et al.

(% ) CODK4

RAPD

( )

NFE3

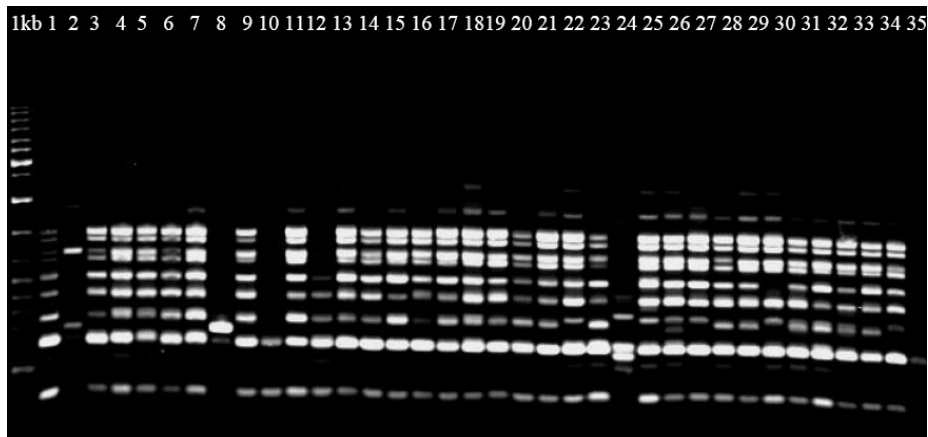
regia

(Charles et al., 1998; Ducci

et al., 1997; Garcia et al., 2002)

RAPD

(b/a×100)	(b)	(a)	(5'-3')	
			CCTGGGTCAG	OPAC11
			AACGGGCGT	OPAD16
			CTGAAGCGCA	OPAE10
			AGGTGACCGT	OPA18
			TGAGGCGTGT	OPAA19
			GTGTGCCCA	OPD15
			TGCTGCAGGT	OPF14
/			ACGGTACCAG	OPF12
			CCGCCAAAC	OPK04
			CACAGGCGGA	OPK19
			GAAGAACCGC	OPMG16
			AGCGCCGACG	OPMG01
			CCGACAAACC	OPZ10
			GTGCCGTTCA	OPZ6



.OPA18

DNA

.(

)

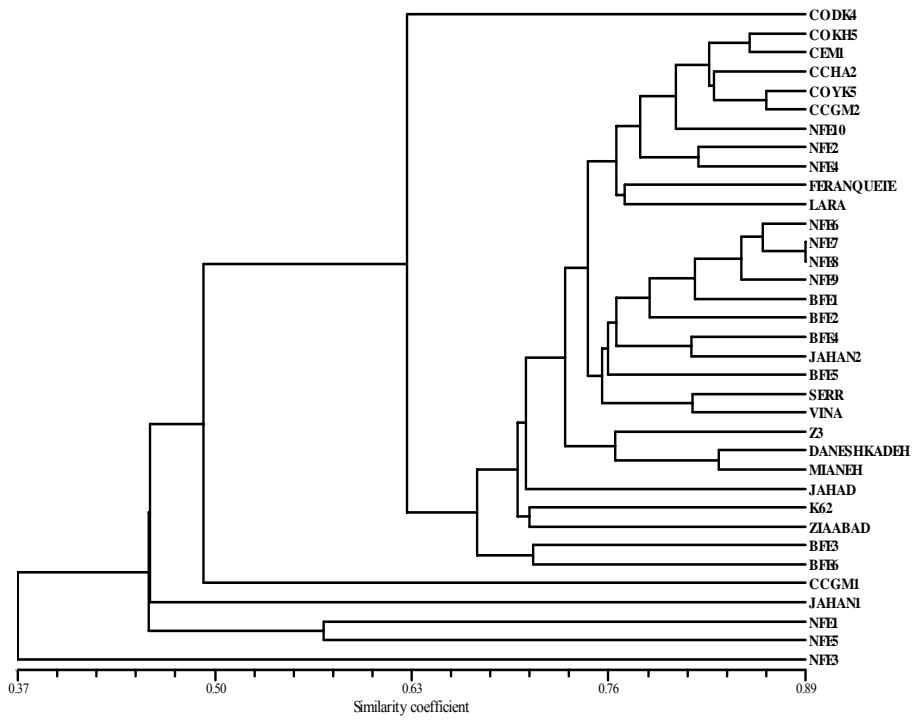
(1kb)

/

(Nicese et al.,

.1998)

(% )



RAPD

( )

UPGMA

/  
 ( / )  
 ( / ) ( / )

( / )  
( / )

(Ver. 2.1) NTSYS

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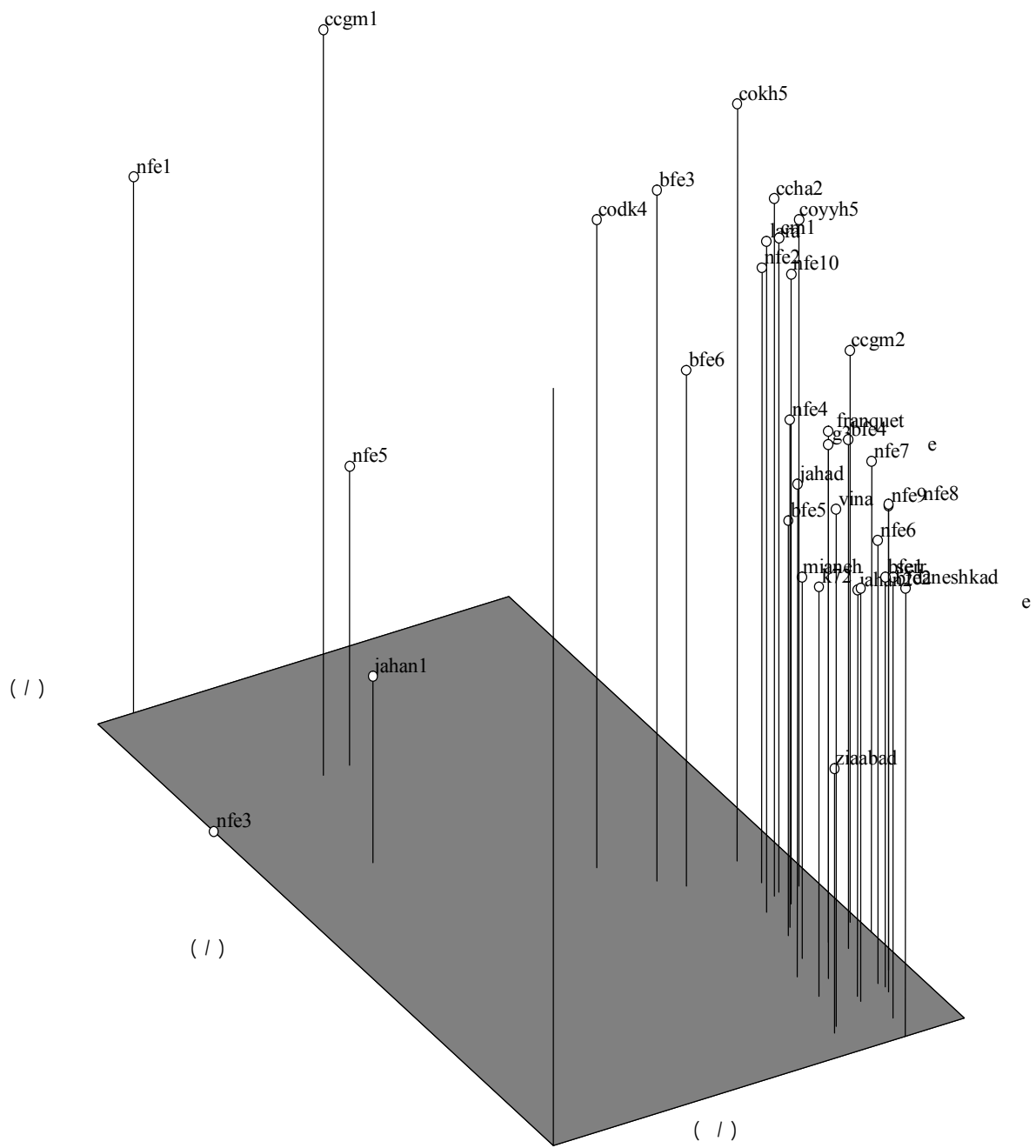


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/	/	/		
/	/	/	/	
/	/	/	/	/

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(Allipanah et al., 2005)



RAPD

( / )

Nicese et al. (2003) Orel et al.

(1998)

RAPD

RAPD



SSR

/ NFE3  
NFE5 NFE1

JAHANI

CCGM1

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