



( )

( )

( )

INRA

(SSR<sub>s</sub>)

( )

CTAB

( )

VVMD6 VVMD5 :

( )

VVMD25 VVMD24 VVMD21 VVMD17 VVMD7 )

( )

VVMD36 VVMD32 VVMD28 VVMD27 VVMD26

( ,

( )

:(PCR)

( )

	/ μl)	μl	PCR	
Taq	DNA	/ U	MgCl	/ mM X
ng	dNTP <sub>s</sub>		μM	/ μM
:				(

SSR

( )

Touchdown

°C

VVMD6) °C

°C

PCR

) (

) °C

(VVMD7

°C

°C

(

1 . Ampelometry

2 . *Vitis*

3 . Simple Sequence Repeats

$$PI = \sum P_i^4 + \sum \sum (P_i P_j)^2$$

$$r = (He - Ho) / (IHe)$$

He =  $\sum_j \sum_i P_j P_i$   
 Ho =  $\sum P_i$

Popgene

(GS)

( ) ( )

UPGMA

W

°C

W °C

( )

)

DNA

(  
( )

(Gel dryer Bio-rad)

Ladder (Roche) Ladder VIII

Elchorm Scientific

M<sub>3</sub>

( )

( )

POPGENE, Ver. 32

(PI)

(PIC)

( ) (r)

( , )

$$PIC = 1 - \sum_{i=1}^n P_{ij}^2$$

- 3 . Unweighted Paired Group using Arithmetic Mean
- 4 . Single Linkage
- 5 . Complete Linkage

- 1 . Polymorphic Information Content
- 2 . Probability of Identity



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	VVMD25	VVMD26	VVMD27	VVMD28	VVMD32	VVMD36
	( )	( )	( )	( )	( )	( )
A	/	/	/	/	/	/
B	/	/	/	/	/	/
C	/	/	/	/	/	/
D	/	/	/	/	/	/
D	/	/	/	/	/	/
E	/	/	/	/	/	/
F	/			/	/	/
G	/			/		/
H				/		
I				/		
J				/		
K				/		

PI (He) ( / / ) PI  
 / (VVMD26 ) / He .  
 / (VVMD5 ) VVMD26  
 / (He) ( / ) PI  
 (VVMD5 ) / (VVMD26 ) PI  
 .( ) / PI .( )  
 VVMD21 .( ) ( / ) VVMD5  
 ( )  
 PI  
 VVMD26 VVMD7 .( )  
 PIC  
 ( / ) VVMD5 PIC  
 PIC= / VVMD26  
 PIC PI ( )  
 .( )

SSR

SSR				PI	PIC	R
VVMD5	/	/	/	/	/	/
VVMD6	/	/	/	/	/	/
VVMD7	/	/	/	/	/	/
VVMD17	/	/	/	/	/	/
VVMD21	/	/	/	/	/	/
VVMD24	/	/	/	/	/	/
VVMD25	/	/	/	/	/	/
VVMD26	/	/	/	/	/	/
VVMD27	/	/	/	/	/	/
VVMD28	/	/	/	/	/	/
VVMD32	/	/	/	/	/	/
VVMD36	/	/	/	/	/	/

POPGENE

VVMD17 ( )

VVMD26 / /

VVMD21

( )

/ ( )

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

( ) / ( )

... :

CORINTO-BIANCO

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CORINTO-BIANCO

MSTATC

t

.(GD= / )

CORINTHE

ALTESSE

UPGMA

PCA

UPGMA

.( )

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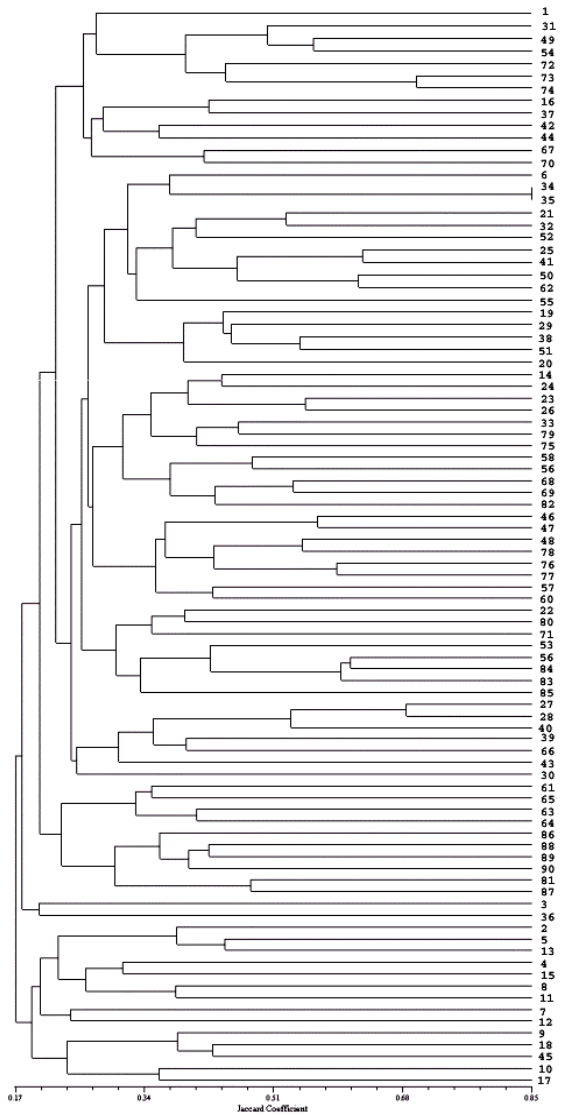
(% )

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( )

PCA

( )



SSR

UPGMA

( )

(PCA)

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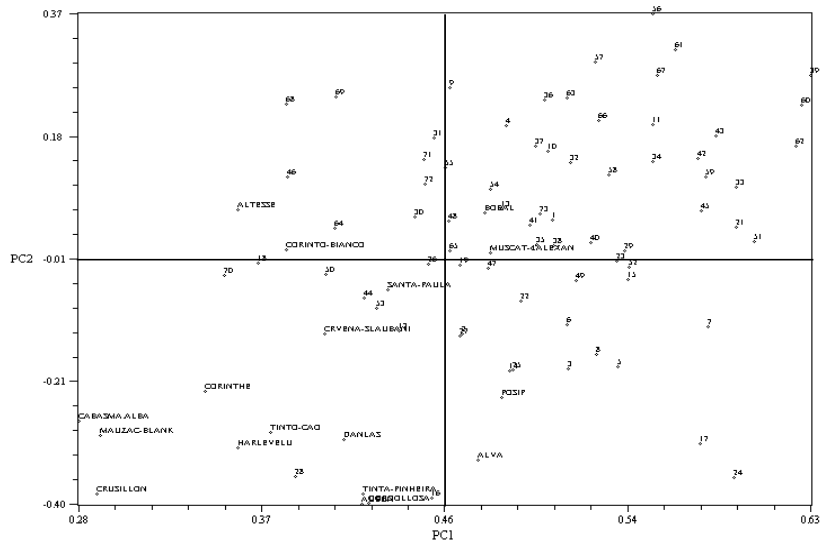


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SSR

	( ' → ' )		
VVMD5F	CTA GAG CTA CGC CAA TCC AA		
VVMD5R	TAT ACC AAA AAT CAT ATT CCT AAA		
VVMD6F	ATC TCT AAC CCT AAA ACC AT		
VVMD6R	CTG TGC TAA GAC GAA GAA GA		
VVMD7F	AGA GTT GCG GAG AAC AGG AT		
VVMD7R	CGA ACC TTC ACA CGC TTG AT		
VVMD17F	TGA CTC GCC AAA ATC TGA CG		
VVMD17R	CAC ACA TAT CAT CAC CAC ACG G		
VVMD21F	GGT TGT CTA TGG AGT TGA TGT TGC		
VVMD21R	GCT TCA GTA AAA AGG GAT TGC G		
VVMD24F	GTG GAT GAT GGA GTA GTC ACG C		
VVMD24R	GAT TTT AGG TTC ATG TTG GTG AAG G		
VVMD25F	TTC CGT TAA AGC AAA AGA AAA AGG		
VVMD25R	TTG GAT TTG AAA TTT ATT GAG GGG		
VVMD26F	GAG ACG ACT GGT GAC ATT GAG C		
VVMD26R	CCA TCA CCA CCA TTT CTA CTG C		
VVMD27F	GTA CCA GAT CTG AAT ACA TCC GTA AGT		
VVMD27R	ACG GGT ATA GAG CAA ACG GTG T		
VVMD28F	AAC AAT TCA ATG AAA AGA GAG AGA GAG A		
VVMD28R	TCA TCA ATT TCG TAT CTC TAT TTG CTG		
VVMD32F	TAT GAT TTT TTA GGG GGG TGA GG		
VVMD32R	GGA AAG ATG GGA TGA CTC GC		
VVMD36F	TAA AAT AAT AAT AGG GGG ACA CGG G		
VVMD36R	GCA ACT GTA AAG GTA AGA CAC AGT CC		

SSR

RAPD

SSR

RAPD

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BOBAL  
CABASMA-ALBA  
CORINTO-BIANCO  
TINTO-CAO  
HARLEVELU  
TINTA-PINHEIRA  
CORINTHE  
DANLAS  
AUBUN  
MAUZAC-BLANK  
GORGOLLOSA  
ALTESSE  
CRUSILLON  
POSIP  
CRVENA-SLAUBANIC  
MUSCAT-d'ALEXANRIE  
SANTA-PAULA  
ALVA

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